FCC PART 15.407

TEST REPORT

For

RTX Hong Kong Limited

8/F Corporation Square, 8 Lam Lok Street, Kowloon Bay, Hong Kong

FCC ID: T7HCT8152

Report Type:	Product Type:
Original Report	DECT Handset

Test Engineer:	Gardon Zhang
Report Number:	RSZ130924008-00E
Report Date:	2014-04-03
Reviewed By:	Jimmy Xiao RF Engineer
Prepared By:	Bay Area Compliance Laboratories Corp. (Shenzhen) 6/F, the 3rd Phase of WanLi Industrial Building ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China Tel: +86-755-33320018 Fax: +86-755-33320008 www.baclcorp.com.cn

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *RTX Hong Kong Limited*'s product, model number: *G966 DECT Handset (FCC ID: T7HCT8152)* or the "EUT" in this report was a *DECT Handset*, which was measured approximately: 13.0 cm (L) x 6.4 cm (W) x 1.3 cm (H), rated with input voltage: DC 3.7V battery.

Note: The product, series model G966 DECT Handset, RTX8152 are electrically identical, they are just different in model number due to market purposes, which was explained in the attached declaration letter. And the model G966 DECT Handset was selected for fully testing.

** All measurement and test data in this report was gathered from production sample serial number: 1309071 (Assigned by BACL, Shenzhen). The EUT supplied by the applicant was received on 2013-09-24.*

Objective

This type approval report is prepared on behalf of *RTX Hong Kong Limited* in accordance with Part 2-Subpart J, Part 15-Subparts A, B and E of the Federal Communication Commissions rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart E, section 15.203, 15.205, 15.207, 15.209 and 15.407 rules.

Related Submittal(s)/Grant(s)

FCC part 15D PUE, part 15.247 DSS, 15.247 DTS and part 15B JBP submissions with FCC ID: T7HCT8152.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2009, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

All emissions measurement was performed and Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Measurement uncertainty with RF radiated emission is 5.91 dB for 30MHz-1GHz.and 4.92 dB for above 1GHz, 1.95dB for conducted measurement.

Test Facility

The test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China.

Test site at Bay Area Compliance Laboratories Corp. (Shenzhen) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on December 06, 2010. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2009.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 382179. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in an engineering mode, which was provided by manufacture.

EUT Exercise Software

Agilent VEE Pro Version: 7063100

Equipment Modifications

No modification was made to the unit tested.

Support Equipment List and Details

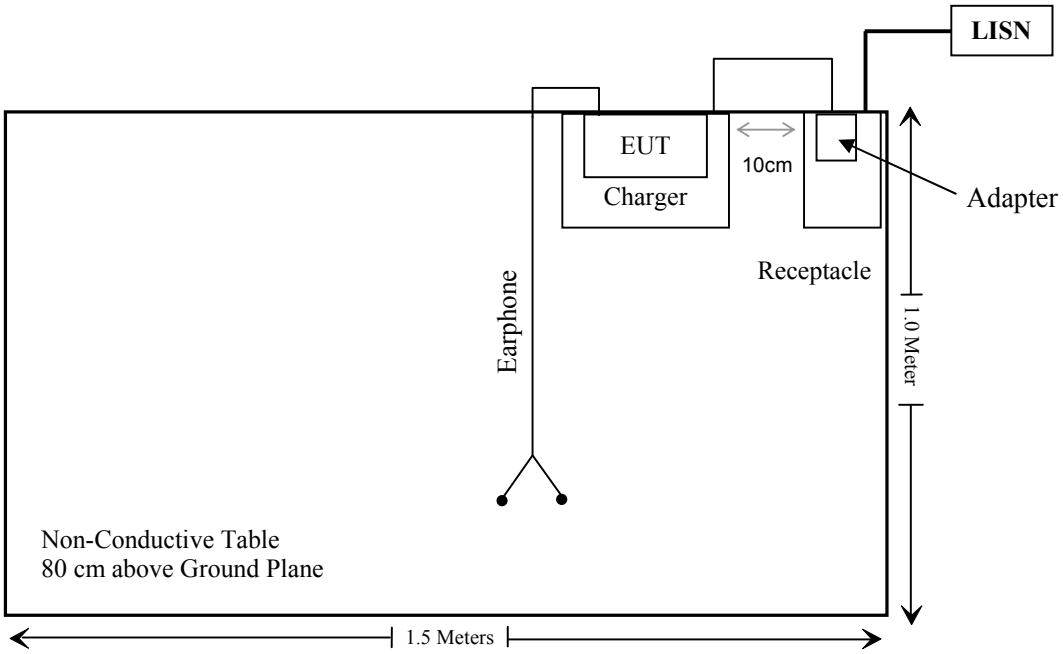
Manufacturer	Description	Model	Serial Number
RTX	CHARGER	Gx66 Desktop Charger	000PPPPPXXXXX
RTX	Adapter	FW7712	/

External I/O Cable

Cable Description	Length (m)	From Port	To
Unshielded Detectable DC Power Cable	2.0	EUT	Adapter

Block Diagram of Test Setup

For conducted emission



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.407 (f), §2.1093	RF Exposure Evaluation	Compliance
§15.203	Antenna Requirement	Compliance
§15.407(b)(6)& §15.207(a)	Conducted Emissions	Compliance
§15.205& §15.209 &§15.407(b) (1),(6),(7)	Undesirable Emission& Restricted Bands	Compliance
§15.407(b) (1) (2) (3) (4)	OUT Of Band Emissions	Compliance
§15.407(a) (1)	26 dB Emission Bandwidth	Compliance
§15.407(a)(1),	Conducted Transmitter Output Power	Compliance
§15.407 (a)(1),(5)	Power Spectral Density	Compliance
§15.407(a)(6)	Peak Excursion Ratio	Compliance

FCC §15.407 (f) & §2.1093 – RF EXPOSURE

Applicable Standard

According to FCC §2.1093 and §1.1307(b) (1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

Result

Please refer to SAR test report RSZ130924008-20B.

FCC §15.203 – ANTENNA REQUIREMENT

Applicable Standard

According to § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

a. Antenna must be permanently attached to the unit.
b. Antenna must use a unique type of connector to attach to the EUT.

Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

And according to FCC 47 CFR section 15.407 (a), if the transmitting antennas of directional gain greater than 6dBi are used, the transmit power and power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Antenna Connector Construction

The EUT has one monopole antenna arrangement for Wi-Fi, which was permanently attached, the antenna gain is 1dBi, fulfill the requirement of this section. Please refer to the internal photos.

Result: Compliance.

FCC §15.407 (b) (6) §15.207 (a) – CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207, §15.407(b) (6)

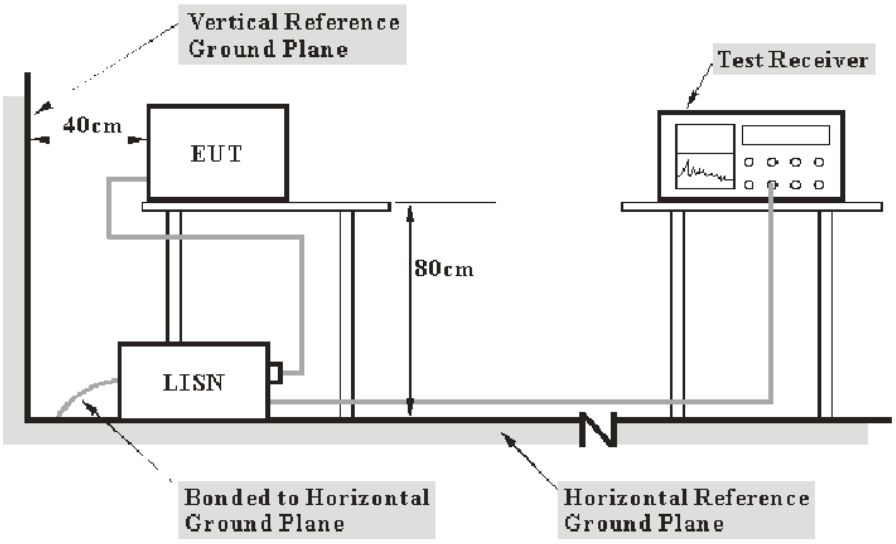
Measurement Uncertainty

Input quantities to be considered for conducted disturbance measurements maybe receiver reading, attenuation of the connection between AMN/ISN and receiver, AMN/ISN voltage division factor, AMN/ISN VDF frequency interpolation and receiver related input quantities, etc.

Based on CISPR 16-4-2:2011, the expended combined standard uncertainty of conducted disturbance test at Bay Area Compliance Laboratories Corp. (Shenzhen) is shown as below. And the uncertainty will not be taken into consideration for the test data recorded in the report

Port	Measurement uncertainty
AC Mains	3.26 dB (k=2, 95% level of confidence)
CAT 3	3.70 dB (k=2, 95% level of confidence)
CAT 5	3.86 dB (k=2, 95% level of confidence)
CAT 6	4.64 dB (k=2, 95% level of confidence)

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.4-2009 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The spacing between the peripherals was 10 cm.

The adapter was connected to a 120 VAC/60 Hz power source.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCS30	100176	2013-06-17	2014-06-17
Rohde & Schwarz	LISN	ENV216	3560.6650.12-101613-Yb	2013-05-07	2014-05-07
Rohde & Schwarz	Transient Limiter	ESH3Z2	DE25985	2013-10-15	2014-10-15
Rohde & Schwarz	CE Test software	EMC 32	V8.53	-	-

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Test Procedure

During the conducted emission test, the adapter was connected to the LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15.207, with the worst margin reading of:

10.9 dB at **0.578000 MHz** in the **Natural** conducted mode

Refer to CISPR16-4-2:2011 and CISPR 16-4-1:2009, the measured level is in compliance with the limit if

$$L_m + U_{(Lm)} \leq L_{lim} + U_{cispr}$$

in BACL, $U_{(Lm)}$ is less than U_{cispr}, if L_m is less than L_{lim}, it implies that the EUT complies with the limit.

Test Data

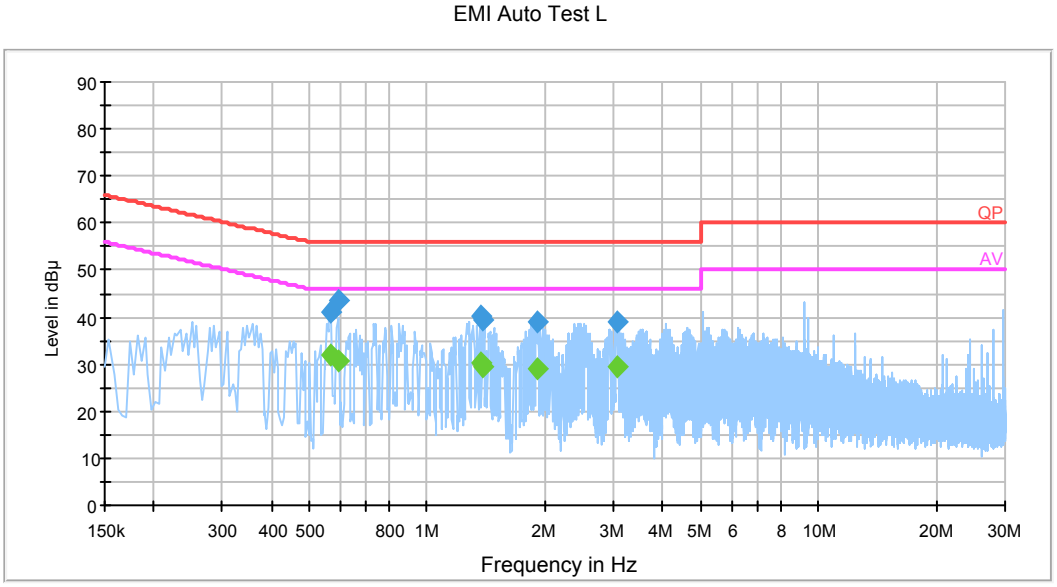
Environmental Conditions

Temperature:	21 ℃
Relative Humidity:	50 %
ATM Pressure:	101.0 kPa

The testing was performed by Gardon Zhang on 2013-10-23.

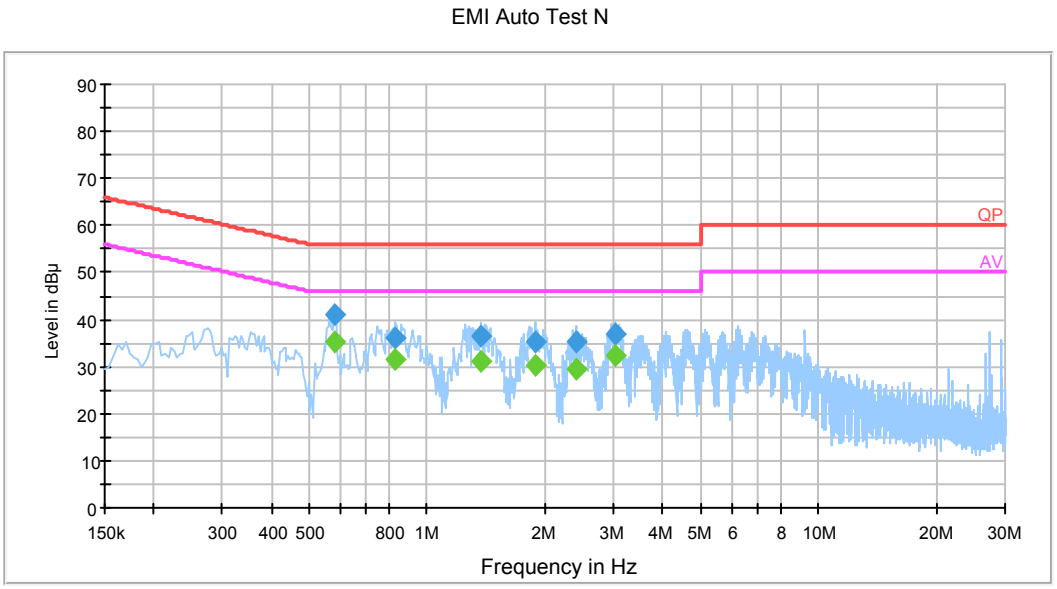
EUT operation mode: Charging and Transmitting

AC 120V/60 Hz, Line



Frequency (MHz)	Corrected Amplitude (dBµV)	Correction Factor (dB)	Limit (dBµV)	Margin (dB)	Detector (PK/Ave./QP)
0.570000	41.0	19.5	56.0	15.0	QP
0.570000	31.8	19.5	46.0	14.2	Ave.
0.594000	43.7	19.5	56.0	12.3	QP
0.594000	30.9	19.5	46.0	15.1	Ave.
1.366000	40.2	19.5	56.0	15.8	QP
1.366000	30.3	19.5	46.0	15.7	Ave.
1.394000	39.6	19.5	56.0	16.4	QP
1.394000	29.6	19.5	46.0	16.4	Ave.
1.922000	38.9	19.5	56.0	17.1	QP
1.922000	29.0	19.5	46.0	17.0	Ave.
3.062000	38.8	19.6	56.0	17.2	QP
3.062000	29.4	19.6	46.0	16.6	Ave.

AC120V, 60 Hz, Neutral:



Frequency (MHz)	Corrected Amplitude (dBµV)	Correction Factor (dB)	Limit (dBµV)	Margin (dB)	Detector (PK/Ave./QP)
0.578000	41.2	19.5	56.0	14.8	QP
0.578000	35.1	19.5	46.0	10.9	Ave.
0.830000	36.2	19.5	56.0	19.8	QP
0.830000	31.5	19.5	46.0	14.5	Ave.
1.374000	36.5	19.5	56.0	19.5	QP
1.374000	31.0	19.5	46.0	15.0	Ave.
1.890000	35.1	19.6	56.0	20.9	QP
1.890000	30.4	19.6	46.0	15.6	Ave.
2.406000	35.3	19.6	56.0	20.7	QP
2.406000	29.3	19.6	46.0	16.7	Ave.
3.042000	37.0	19.6	56.0	19.0	QP
3.042000	32.5	19.6	46.0	13.5	Ave.

Note:
1) Correction Factor =LISN/ISN VDF (Voltage Division Factor) + Cable Loss + Pulse Limiter Attenuation
The corrected factor has been input into the transducer of the test software.
2) Corrected Amplitude = Reading + Correction Factor
3) Margin = Limit – Corrected Amplitude
4) *within measurement uncertainty!

§15.205 & §15.209 & §15.407(B) (1),(6),(7) – UNDESIRABLE EMISSION & RESTRICTED BANDS

Applicable Standard

FCC §15.407 (b) (1), (2), (3), (6), (7); §15.209; §15.205;

For transmitters operating in the 5.15–5.25 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of –27 dBm/MHz.

For transmitters operating in the 5.25–5.35 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of –27 dBm/MHz. Devices operating in the 5.25–5.35 GHz band that generate emissions in the 5.15–5.25 GHz band must meet all applicable technical requirements for operation in the 5.15–5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of –27 dBm/MHz in the 5.15–5.25 GHz band.

For transmitters operating in the 5.47–5.725 GHz band: all emissions outside of the 5.47–5.725 GHz band shall not exceed an EIRP of −27 dBm/MHz.

For transmitters operating in the 5.725–5.825 GHz band: all emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an EIRP of –17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an EIRP of –27 dBm/MHz。

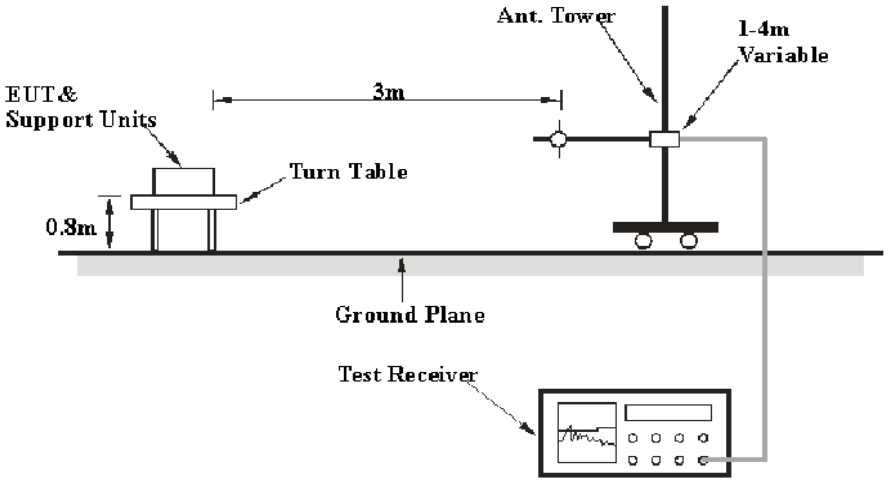
Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209.

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on CISPR 16-4-2:2011, the expended combined standard uncertainty of radiation emissions at Bay Area Compliance Laboratories Corp. (Shenzhen) is 5.91 dB for 30MHz-1GHz and 4.92 dB for above 1GHz, 1.95dB for conducted measurement at antenna port. And the uncertainty will not be taken into consideration for the test data recorded in the report

EUT Setup



The radiated emission tests were performed in the 1.5 meters chamber test site, using the setup accordance with the ANSI C63.4-2009. The specification used was the FCC 15.209, and FCC 15.407 limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The adapter was connected to a 120 VAC/60 Hz power source,

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 30 MHz to 40 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Detector
30 MHz – 1000 MHz	100 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1 MHz	3 MHz	/	PK
	1 MHz	10 Hz	/	Ave.

Test Procedure

Radiated Spurious Emission

During the radiated emission test, the adapter was connected to the AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all the installation combinations.

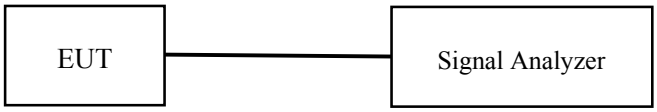
Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1GHz, peak and Average detection modes for frequencies above 1GHz.

The EUT is set 1.5 meter away from the testing antenna, which is varied from 1-4 mete, and the EUT is placed on a turntable, which is 0.8 meter above ground plane, the table shall be rotated for 360 degrees to find out the highest emission. The receiving antenna should be changed the polarization both of horizontal and vertical.

According to C63.4, the above 1G test result shall be extrapolated to the specified distance using an extrapolation factor of 20dB/decade from 3m to 1.5m
Distance extrapolation factor =20 log (3m/1.5m) dB
Extrapolation result = Corrected Amplitude (dBμV/m) -6dB

Conducted Spurious Emission at Antenna Port

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. The Resolution bandwidth is set to 1MHz, The Video bandwidth is set to ≥ 1MHz, report the peak value out of the oprating band.
3. Repeat above procedures until all frequencies measured were complete.



Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Corrected Amplitude = Meter Reading + Antenna Factor + Cable Loss - Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Limit – Corrected Amplitude

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
HP	Amplifier	8447E	1937A01046	2013-09-30	2014-09-30
Rohde & Schwarz	EMI Test Receiver	ESCI	101122	2013-09-17	2014-09-17
Sunol Sciences	Broadband Antenna	JB1	A040904-2	2011-11-28	2014-11-27
Mini	Amplifier	ZVA-183-S+	5969001149	2013-04-03	2014-04-03
DUCOMMUN	Pre-amplifier	ALN-22093530-01	991373-01	2013-08-03	2014-08-03
A.H. System	Horn Antenna	SAS-200/571	135	2012-02-11	2015-02-10
Agilent	Spectrum Analyzer	8564E	3943A01781	2013-05-07	2014-05-07
Rohde & Schwarz	Signal Analyzer	FSIQ26	8386001028	2013-11-12	2014-11-12
the electro-Mechanics Co.	Horn Antenna	3116	9510-2270	2013-10-14	2016-10-13
R&S	Auto test Software	EMC32	V9.10	--	--

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Title 47, Part 15, Subpart C, Section 15.205, 15.209 and 15.407, with the worst margin reading of:

4.16 dB at **5354.4 MHz** in the **Horizontal** polarization (802.11a mode)

Refer to CISPR16-4-2:2011 and CISPR 16-4-1:2009, the measured level is in compliance with the limit if

$$L_m + U_{(Lm)} \leq L_{lim} + U_{cispr}$$

in BACL, $U_{(Lm)}$ is less than U_{cispr}, if L_m is less than L_{lim}, it implies that the EUT complies with the limit.

Test Data

Environmental Conditions

Temperature:	21 ℃
Relative Humidity:	52 %
ATM Pressure:	101.0 kPa

The testing was performed by Gardon Zhang on 2014-02-17.

EUT operation mode: Transmitting

30 MHz ~ 40 GHz:

802.11a mode:

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB)	Corrected Amplitude (dBμV/m)	FCC Part 15.407/205/209	
	Reading (dBμV)	Detector (PK/QP/Ave.)		Height (m)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
5180 MHz									
151.1	44.84	QP	120	1.0	H	-14.9	29.94	43.5	13.56
5180.0	92.44	PK	330	2.2	H	11.93	104.37	/	/
5180.0	93.17	Ave.	330	2.2	H	11.93	105.1	/	/
5180.0	87.11	PK	71	1.6	V	11.93	99.04	/	/
5180.0	75.89	Ave.	71	1.6	V	11.93	87.82	/	/
4925.1	43.57	PK	312	2.0	V	12.46	56.03	74	17.97
4925.1	32.66	Ave.	312	2.0	V	12.46	45.12	54	8.88
5107.0	45.92	PK	49	1.7	H	11.83	57.75	74	16.25
5107.0	34.50	Ave.	49	1.7	H	11.83	46.33	54	7.67
5391.2	42.81	PK	46	1.9	H	12.01	54.82	74	19.18
5391.2	31.26	Ave.	46	1.9	H	12.01	43.27	54	10.73
8378.8	37.95	PK	306	1.8	H	17.36	55.31	74	18.69
8378.8	22.31	Ave.	306	1.8	H	17.36	39.67	54	14.33
10360.0	40.73	PK	293	1.0	V	20.25	60.98	74	13.02
10360.0	24.35	Ave.	293	1.0	V	20.25	44.6	54	9.40
15540.0	36.65	PK	70	1.5	H	23.85	60.50	74	13.50
15540.0	21.64	Ave.	70	1.5	H	23.85	45.49	54	8.51
5200 MHz									
151.1	43.69	QP	164	1.0	H	-14.9	28.79	43.5	14.71
5200.0	93.27	PK	101	2.5	H	11.93	105.2	/	/
5200.0	83.94	Ave.	101	2.5	H	11.93	95.87	/	/
5200.0	86.65	PK	36	1.9	V	11.93	98.58	/	/
5200.0	75.12	Ave.	36	1.9	V	11.93	87.05	/	/
5118.7	46.31	PK	275	1.0	V	11.83	58.14	74	15.86
5118.7	34.88	Ave.	275	1.0	V	11.83	46.71	54	7.29
5352.6	50.07	PK	106	1.4	H	12.01	62.08	74	11.92
5352.6	37.56	Ave.	106	1.4	H	12.01	49.57	54	4.43
5412.7	48.61	PK	101	2.0	H	12.1	60.71	74	13.29
5412.7	35.28	Ave.	101	2.0	H	12.1	47.38	54	6.62
7185.1	36.81	PK	360	2.3	H	17.06	53.87	74	20.13
7185.1	21.41	Ave.	360	2.3	H	17.06	38.47	54	15.53
10400.0	40.16	PK	18	1.8	V	20.38	60.54	74	13.46
10400.0	23.57	Ave.	18	1.8	V	20.38	43.95	54	10.05
15600.0	36.60	PK	357	1.4	H	23.85	60.45	74	13.55
15600.0	20.91	Ave.	357	1.4	H	23.85	44.76	54	9.24

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB)	Corrected Amplitude (dBμV/m)	FCC Part 15.407/205/209	
	Reading (dBμV)	Detector (PK/QP/Ave.)		Height (m)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
5240 MHz									
151.1	43.96	QP	164	1.0	H	-14.9	29.06	43.5	14.44
5240.0	93.80	PK	359	2.3	H	11.92	105.72	/	/
5240.0	84.55	Ave.	359	2.3	H	11.92	96.47	/	/
5240.0	88.83	PK	77	2.3	V	11.92	100.75	/	/
5240.0	78.96	Ave.	77	2.3	V	11.92	90.88	/	/
5114.8	40.09	PK	283	2.1	V	11.83	51.92	74	22.08
5114.8	27.46	Ave.	283	2.1	V	11.83	39.29	54	14.71
5354.4	49.99	PK	112	2.0	H	12.01	62.00	74	12.00
5354.4	37.83	Ave.	112	2.0	H	12.01	49.84	54	4.16
5412.3	42.57	PK	326	2.1	H	12.1	54.67	74	19.33
5412.3	30.62	Ave.	326	2.1	H	12.1	42.72	54	11.28
7420.7	37.66	PK	164	1.5	V	15.91	53.57	74	20.43
7420.7	21.84	Ave.	164	1.5	V	15.91	37.75	54	16.25
10480.0	41.14	PK	135	1.7	H	20.41	61.55	74	12.45
10480.0	24.36	Ave.	135	1.7	H	20.41	44.77	54	9.23
15720.0	35.24	PK	74	1.1	H	23.85	59.09	74	14.91
15720.0	20.59	Ave.	74	1.1	H	23.85	44.44	54	9.56

802.11n mode:

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB)	Corrected Amplitude (dBμV/m)	FCC Part 15.407/205/209	
	Reading (dBμV)	Detector (PK/QP/Ave.)		Height (m)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
5180 MHz									
151.1	44.72	QP	190	1.1	H	-14.9	29.82	43.5	13.68
5180.0	91.49	PK	341	1.9	H	11.93	103.42	/	/
5180.0	80.36	Ave.	341	1.9	H	11.93	92.29	/	/
5180.0	87.12	PK	54	1.8	V	11.93	99.05	/	/
5180.0	75.49	Ave.	54	1.8	V	11.93	87.42	/	/
4832.5	42.56	PK	96	1.1	V	12.4	54.96	74	19.04
4832.5	31.27	Ave.	96	1.1	V	12.4	43.67	54	10.33
5104.4	43.48	PK	273	1.6	H	11.83	55.31	74	18.69
5104.4	31.80	Ave.	273	1.6	H	11.83	43.63	54	10.37
5356.4	42.81	PK	178	1.8	H	12.01	54.82	74	19.18
5356.4	35.24	Ave.	178	1.8	H	12.01	47.25	54	6.75
8422.0	36.76	PK	77	2.3	V	17.41	54.17	74	19.83
8422.0	21.30	Ave.	77	2.3	V	17.41	38.71	54	15.29
10360.0	37.59	PK	327	1.7	V	20.25	57.84	74	16.16
10360.0	22.36	Ave.	327	1.7	V	20.25	42.61	54	11.39
15540.0	36.10	PK	275	1.2	H	23.85	59.95	74	14.05
15540.0	20.62	Ave.	275	1.2	H	23.85	44.47	54	9.53
5200 MHz									
151.1	45.36	QP	130	1.1	H	-14.9	30.46	43.5	13.04
5200.0	92.10	PK	226	1.2	H	11.93	104.03	/	/
5200.0	83.57	Ave.	226	1.2	H	11.93	95.50	/	/
5200.0	86.43	PK	63	2.2	V	11.93	98.36	/	/
5200.0	75.29	Ave.	63	2.2	V	11.93	87.22	/	/
4763.2	45.29	PK	359	1.1	V	12.44	57.73	74	16.27
4763.2	32.61	Ave.	359	1.1	V	12.44	45.05	54	8.95
5125.5	46.03	PK	98	1.9	H	11.83	57.86	74	16.14
5125.5	34.42	Ave.	98	1.9	H	11.83	46.25	54	7.75
5354.6	49.53	PK	28	1.7	H	12.01	61.54	74	12.46
5354.6	37.13	Ave.	28	1.7	H	12.01	49.14	54	4.86
7954.9	36.78	PK	162	2.4	V	17.21	53.99	74	20.01
7954.9	22.65	Ave.	162	2.4	V	17.21	39.86	54	14.14
10400.0	40.73	PK	265	2.4	V	20.38	61.11	74	12.89
10400.0	23.82	Ave.	265	2.4	V	20.38	44.20	54	9.80
15600.0	36.05	PK	194	1.5	H	23.85	59.90	74	14.10
15600.0	21.14	Ave.	194	1.5	H	23.85	44.99	54	9.01

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB)	Corrected Amplitude (dBμV/m)	FCC Part 15.407/205/209	
	Reading (dBμV)	Detector (PK/QP/Ave.)		Height (m)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
5240 MHz									
151.1	44.37	QP	98	1.1	H	-14.9	29.47	43.5	14.03
5240.0	93.17	PK	81	1.1	H	11.92	105.09	/	/
5240.0	83.95	Ave.	81	1.1	H	11.92	95.87	/	/
5240.0	88.20	PK	126	1.4	V	11.92	100.12	/	/
5240.0	78.31	Ave.	126	1.4	V	11.92	90.23	/	/
5132.6	39.77	PK	169	2.2	V	11.83	51.60	74	22.40
5132.6	27.04	Ave.	169	2.2	V	11.83	38.87	54	15.13
5361.7	49.28	PK	256	1.6	H	11.92	61.20	74	12.80
5361.7	37.25	Ave.	256	1.6	H	12.01	49.26	54	4.74
5422.3	45.83	PK	253	1.1	H	12.1	57.93	74	16.07
5422.3	33.43	Ave.	253	1.1	H	12.1	45.53	54	8.47
7300.6	36.30	PK	274	2.1	V	16.62	52.92	74	21.08
7300.6	22.83	Ave.	274	2.1	V	16.62	39.45	54	14.55
10480.0	40.27	PK	267	1.8	H	20.41	60.68	74	13.32
10480.0	24.06	Ave.	267	1.8	H	20.41	44.47	54	9.53
15720.0	36.43	PK	36	2.0	H	23.85	60.28	74	13.72
15720.0	20.68	Ave.	36	2.0	H	23.85	44.53	54	9.47

Note:
Corrected Amplitude = Corrected Factor + Reading
Corrected Factor=Antenna factor (RX) + Cable Loss – Amplifier Factor
Margin = Limit- Corr. Amplitude

FCC §15.407(b) (1) (2) (3) (4) – OUT OF BAND EMISSIONS

Applicable Standard

FCC §15.407 (b) (1), (2), (3), (4);

For transmitters operating in the 5.15–5.25 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of –27 dBm/MHz.

For transmitters operating in the 5.25–5.35 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of –27 dBm/MHz. Devices operating in the 5.25–5.35 GHz band that generate emissions in the 5.15–5.25 GHz band must meet all applicable technical requirements for operation in the 5.15–5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of –27 dBm/MHz in the 5.15–5.25 GHz band.

For transmitters operating in the 5.47–5.725 GHz band: all emissions outside of the 5.47–5.725 GHz band shall not exceed an EIRP of −27 dBm/MHz.

For transmitters operating in the 5.725–5.825 GHz band: all emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an EIRP of –17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an EIRP of –27 dBm/MHz.

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibration or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measuremen instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW to 1 MHz and VBW to 3MHz of spectrum analyzer.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	8386001028	2013-11-12	2014-11-12

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements, traceable to National Primary Standards and International System of Units (SI).

Test Data

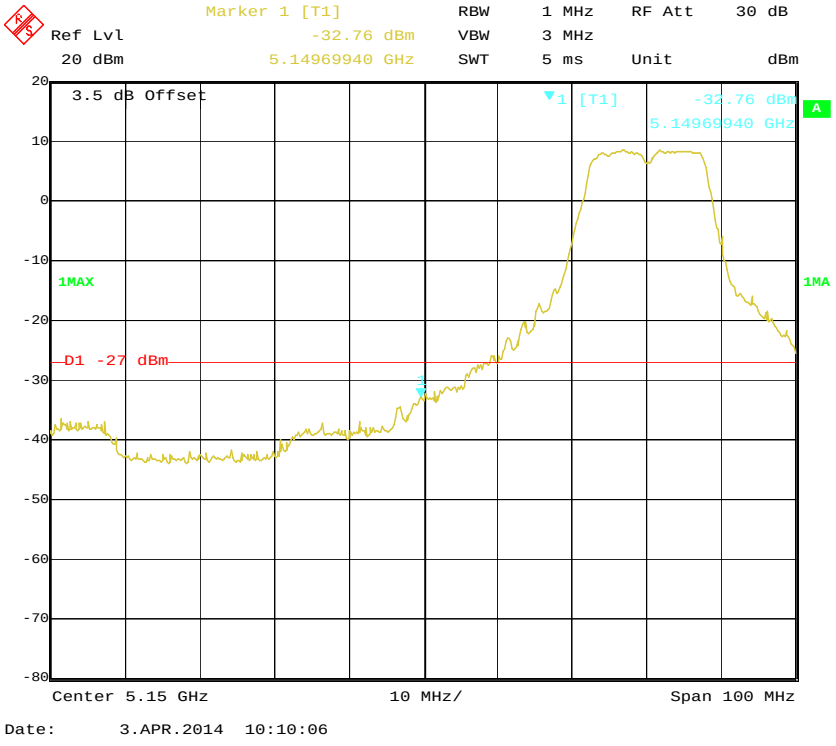
Environmental Conditions

Temperature:	21 ℃
Relative Humidity:	50 %
ATM Pressure:	101.0 kPa

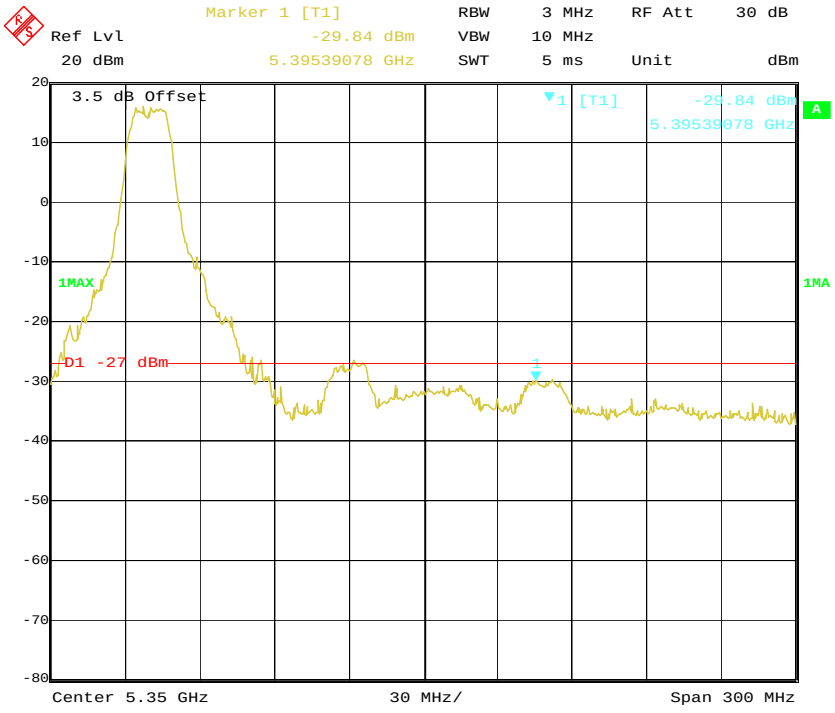
The testing was performed by Gardon Zhang on 2014-04-03.

EUT operation mode: Transmitting

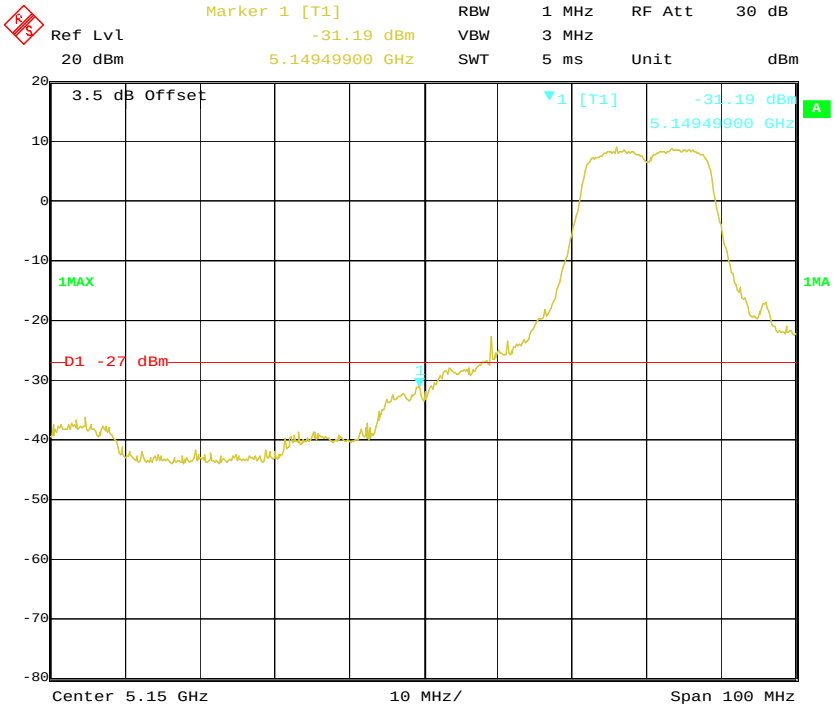
802.11a mode, 5150 ~ 5250 MHz, Left Band



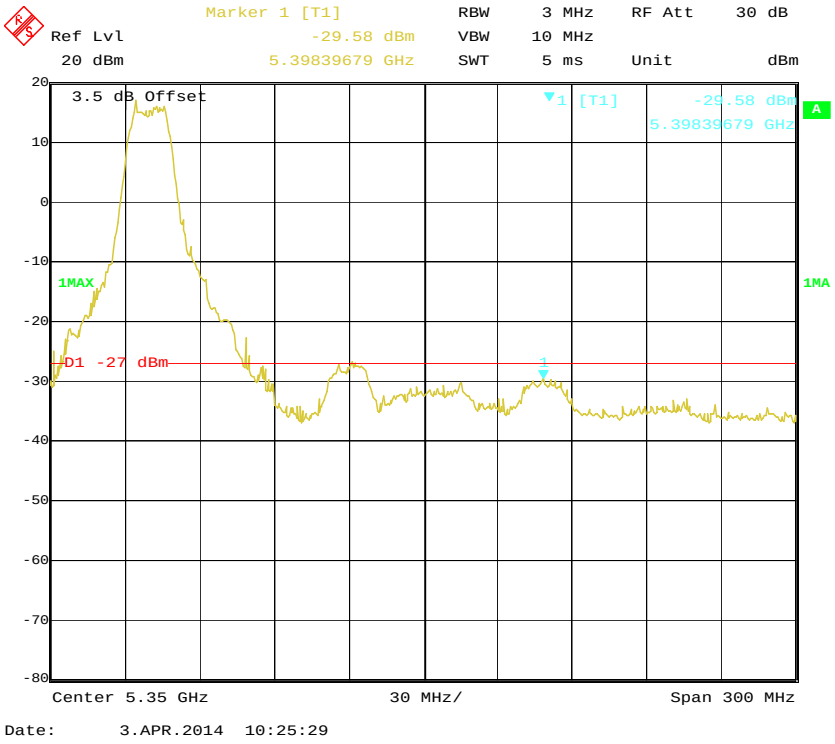
802.11a mode, 5150 ~ 5250 MHz, Right Band



802.11n mode, 5150 ~ 5250 MHz, Left Band



802.11n mode, 5150 ~ 5250 MHz, Right Band



FCC §15.407(a) (1) – 26 dB EMISSION BANDWIDTH

Applicable Standard

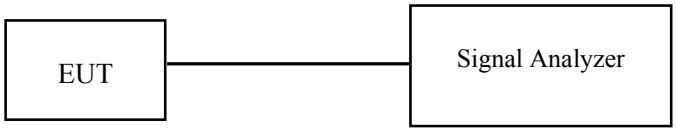
For the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW or 4 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 4 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the 5.25–5.35 GHz and 5.47–5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725–5.825 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 1 W or 17 dBm + 10 log B, where B is the 26-dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 17 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Use a RBW = approximately 1% of the emission bandwidth.Set the VBW > RBW. Use a peak detector.Do not use the Max Hold function. Rather, use the view button to capture the emission. Measure maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat, measurement as needed until the RBW/EBW ratio is approximately 1%.
4. Repeat above procedures until all frequencies measured were complete.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	8386001028	2013-11-12	2014-11-12

* Statement of Traceability: Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	19~23 ℃
Relative Humidity:	50~55 %
ATM Pressure:	100~101.0 kPa

The testing was performed by Gardon Zhang from 2014-02-12 to 2014-02-19.

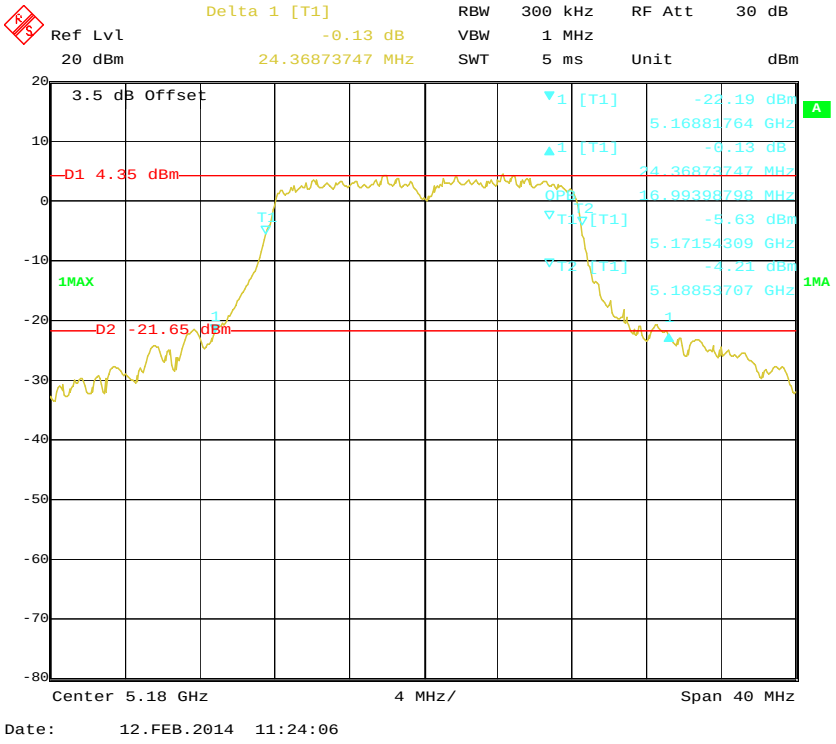
EUT operation mode: Transmitting

Test Result: Pass.

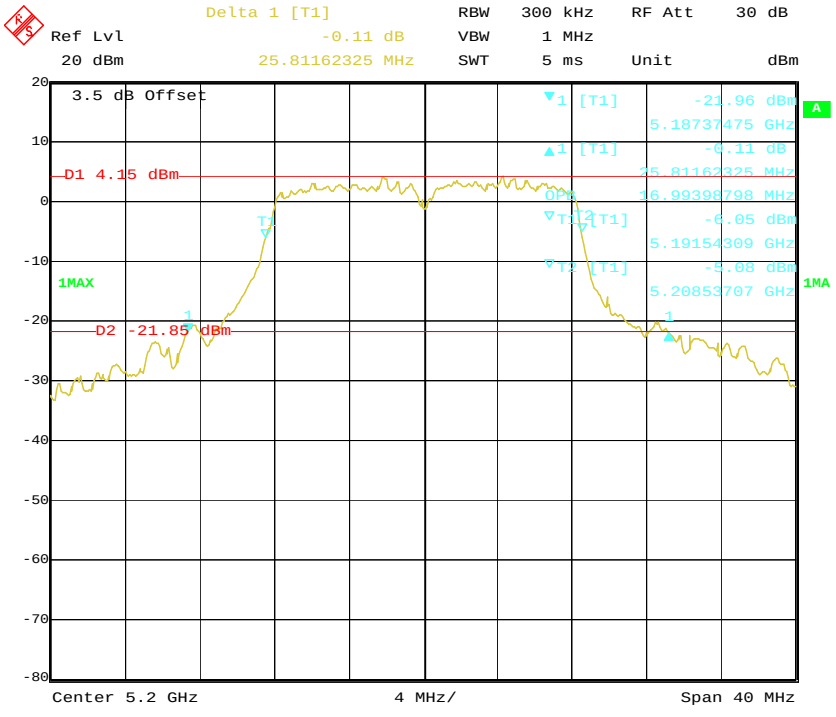
Please refer to the following tables and plots.

Frequency (MHz)	99% Occupied Bandwidth (MHz)	26dB Emission Bandwidth (MHz)
802.11a		
5180	16.99	24.37
5200	16.99	25.81
5220	17.07	26.05
5240	17.15	26.33
802.11n		
5180	18.04	24.61
5200	18.04	24.13
5220	18.12	27.25
5240	18.04	28.26

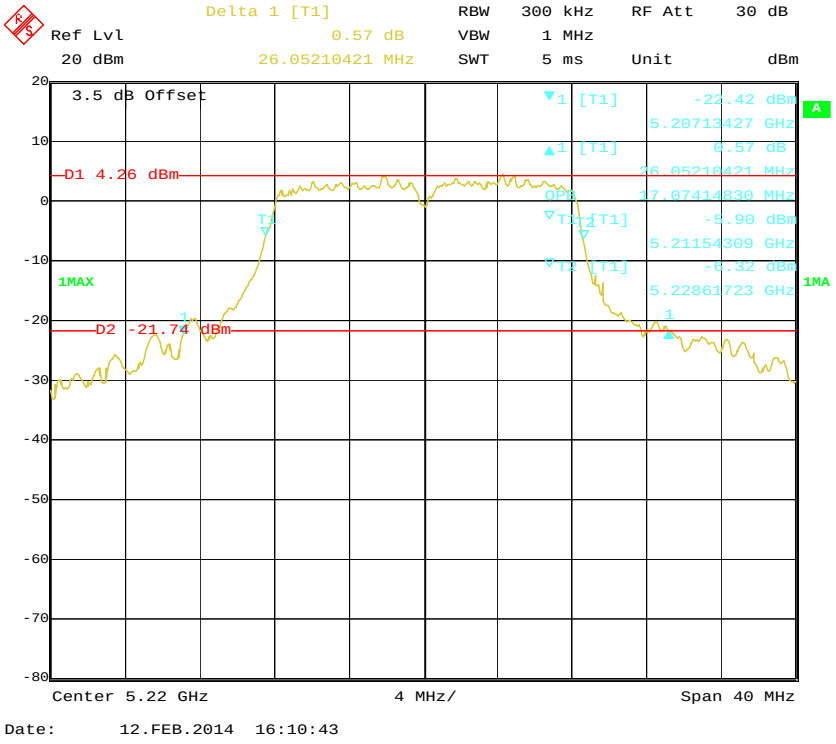
802.11a mode, 99% Occupied Bandwidth and 26dB Emission Bandwidth, 5180 MHz



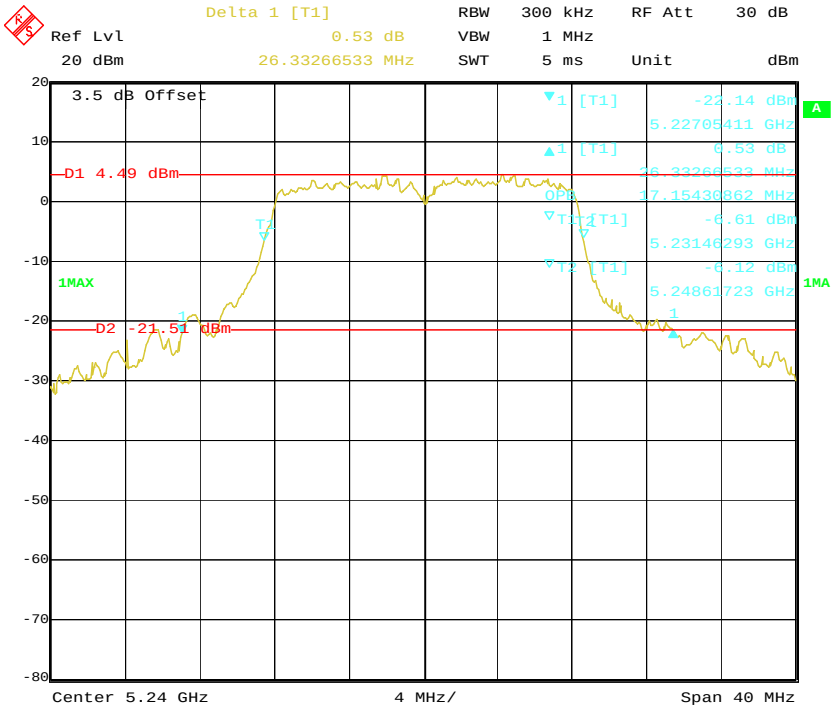
802.11a mode, 99% Occupied Bandwidth and 26dB Emission Bandwidth, 5200 MHz



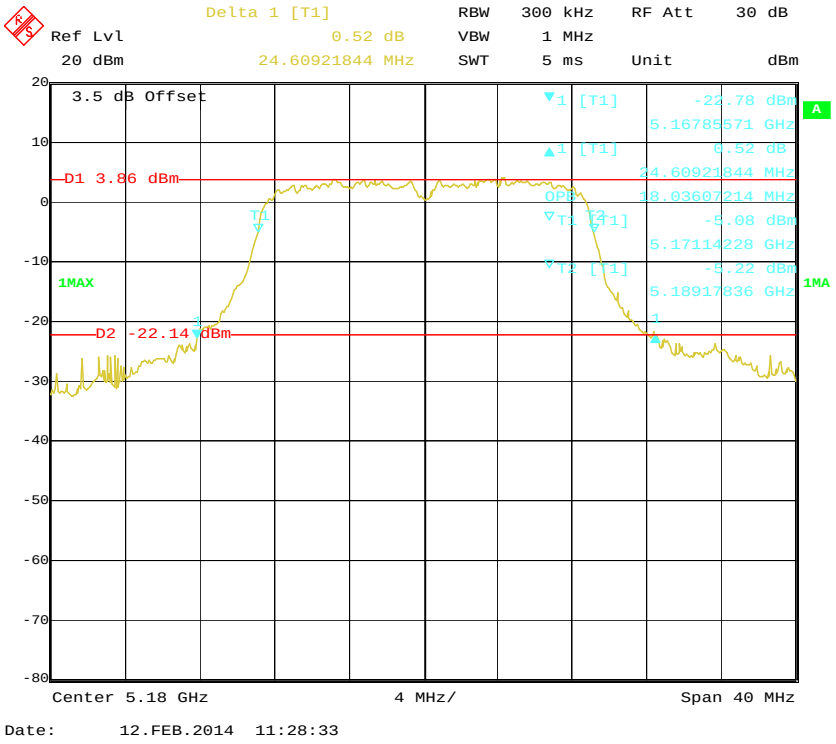
802.11a mode, 99% Occupied Bandwidth and 26dB Emission Bandwidth, 5220 MHz



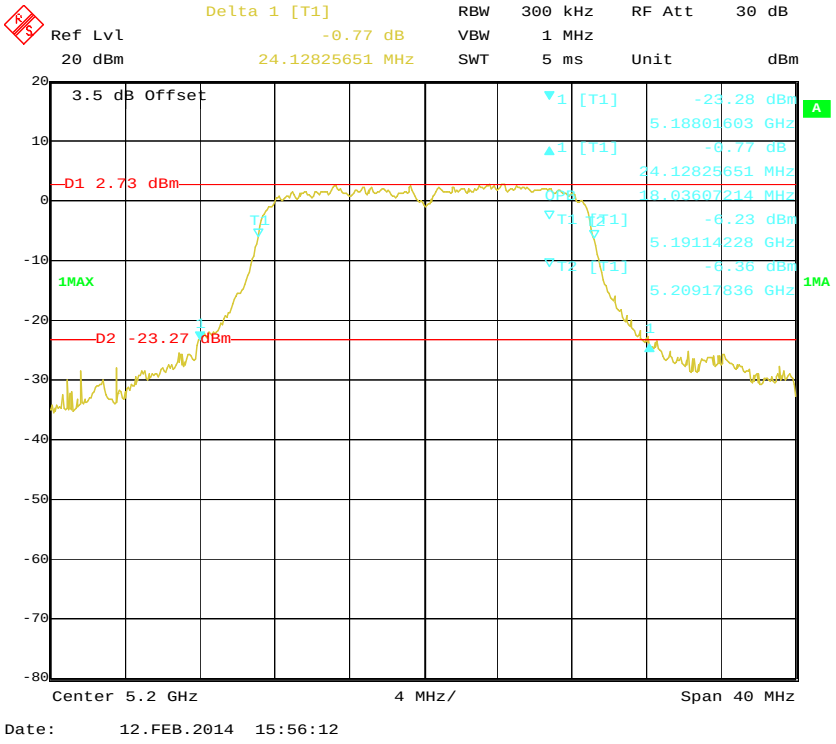
802.11a mode, 99% Occupied Bandwidth and 26dB Emission Bandwidth, 5240 MHz



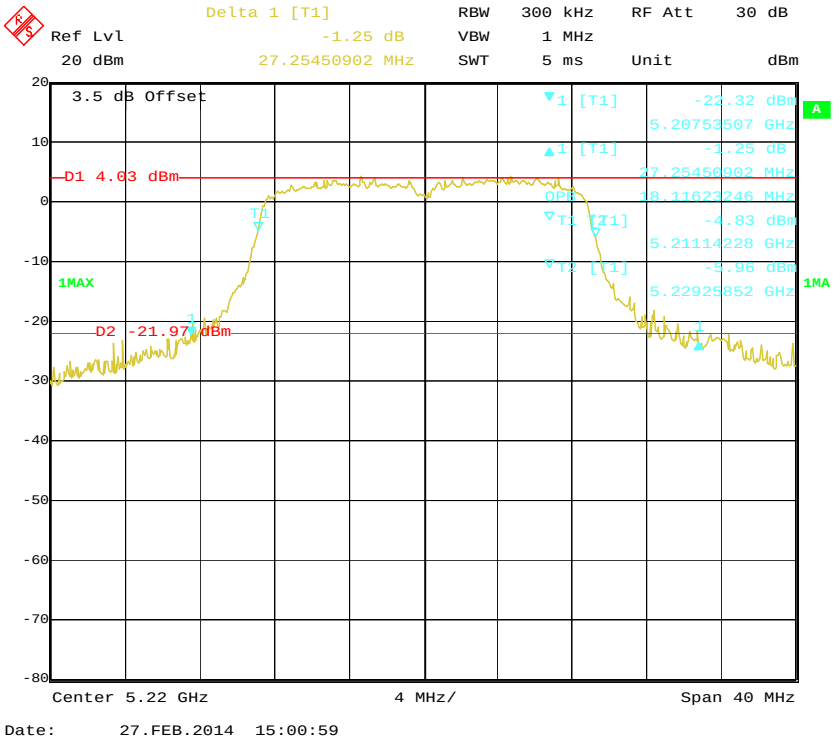
802.11n mode, 99% Occupied Bandwidth and 26dB Emission Bandwidth, 5180 MHz



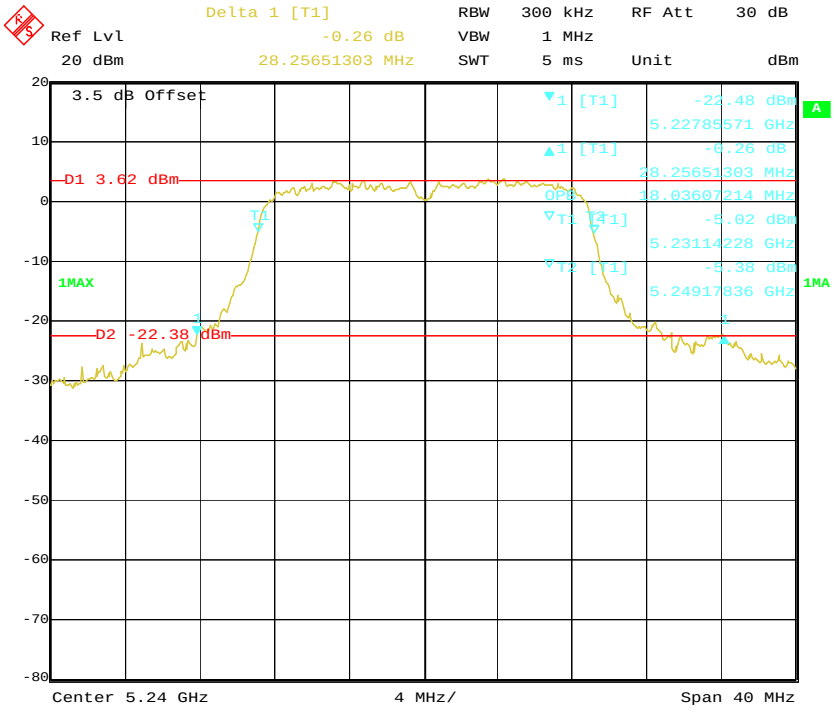
802.11n mode, 99% Occupied Bandwidth and 26dB Emission Bandwidth, 5200 MHz



802.11n mode, 99% Occupied Bandwidth and 26dB Emission Bandwidth, 5220 MHz



802.11n mode, 99% Occupied Bandwidth and 26dB Emission Bandwidth, 5240 MHz



FCC §15.407(a) (1) – CONDUCTED TRANSMITTER OUTPUT POWER

Applicable Standard

For the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW or 4 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 4 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the 5.25–5.35 GHz and 5.47–5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725–5.825 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 1 W or 17 dBm + 10 log B, where B is the 26-dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 17 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT was set without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set span to encompass the entire emission bandwidth (EBW) of the signal. Set RBW = 1 MHz.Set VBW ≥ 3 MHz. Use sample detector mode Use a video trigger with the trigger level set to enable triggering only on full power pulses.Transmitter must operate at full control power for entire sweep of every sweep.If the device transmits continuously, with no off intervals or reduced power intervals, the trigger may be set to “free run”. Trace average 100 traces in power averaging mode.Compute power by integrating the spectrum across the 99% OBW of the signal. The integration can be performed using the spectrum analyzer’s band power measurement function with band limits set equal to the EBW band edges or by summing power levels in each 1 MHz band in linear power terms.

4. The 1 MHz band power levels to be summed can be obtained by averaging, in linear power terms, power levels in each frequency bin across the 1 MHz.
5. Repeat above procedures until all frequencies measured were complete.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	8386001028	2013-11-12	2014-11-12

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	21 ℃
Relative Humidity:	50 %
ATM Pressure:	101.0 kPa

The testing was performed by Gardon Zhang on 2014-02-16.

EUT operation mode: Transmitting

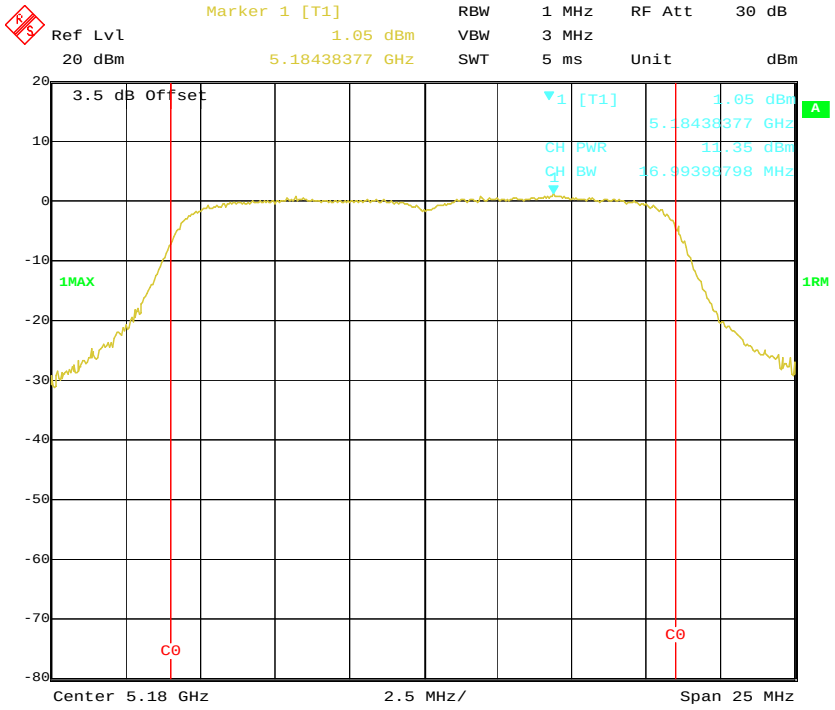
Test Result: Pass

Please refer to the following tables and plots.

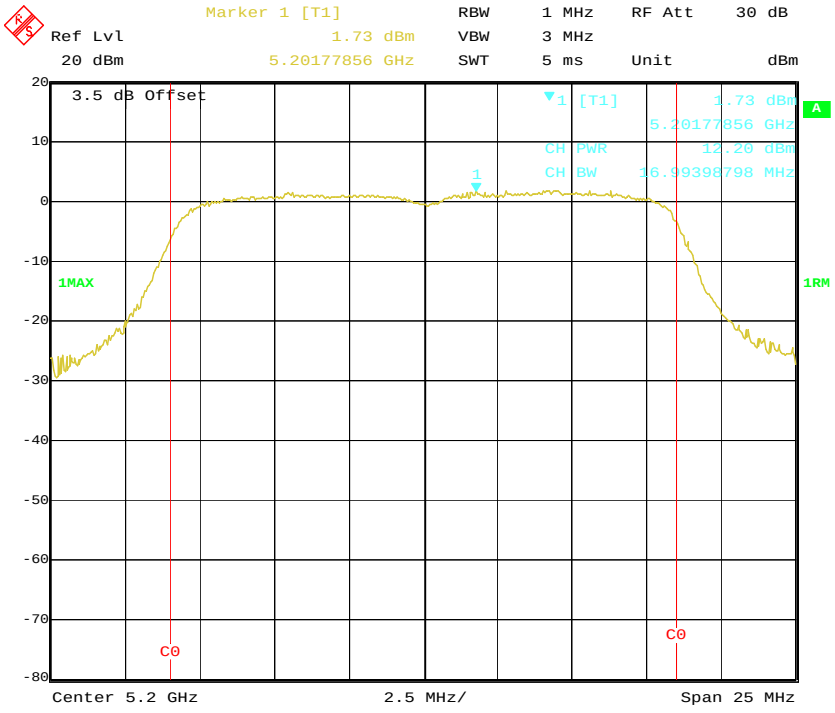
Frequency (MHz)	Conducted Output Power (dBm)	Limit (dBm)	Result
802.11a			
5180	11.35	17.00	Pass
5200	12.20	17.00	Pass
5220	12.18	17.00	Pass
5240	12.21	17.00	Pass
802.11n			
5180	12.31	17.00	Pass
5200	12.93	17.00	Pass
5220	12.60	17.00	Pass
5240	12.25	17.00	Pass

Note: The antenna Gain is 1 dBi.

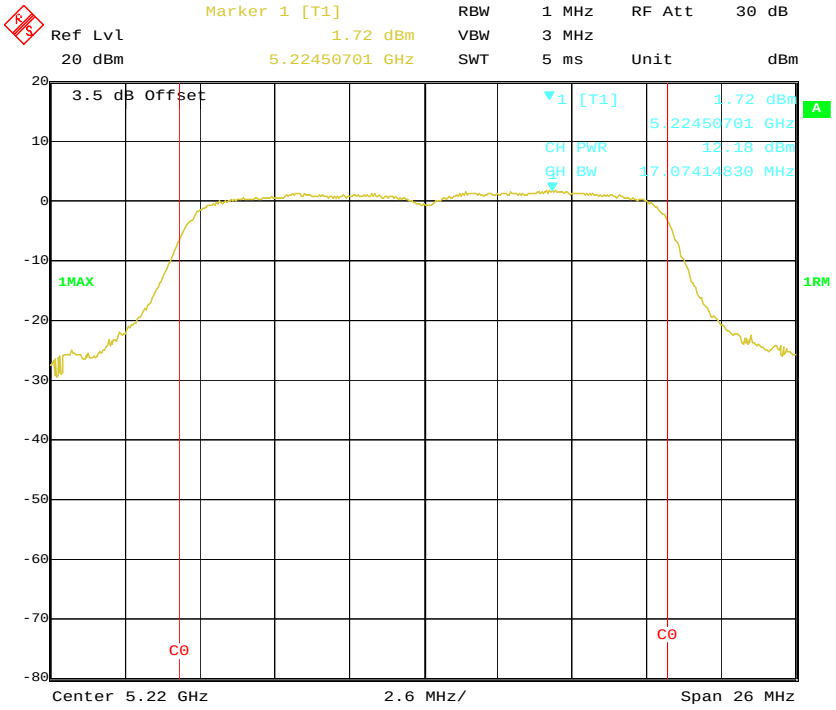
802.11a mode, RF Conducted Output Power, 5180 MHz



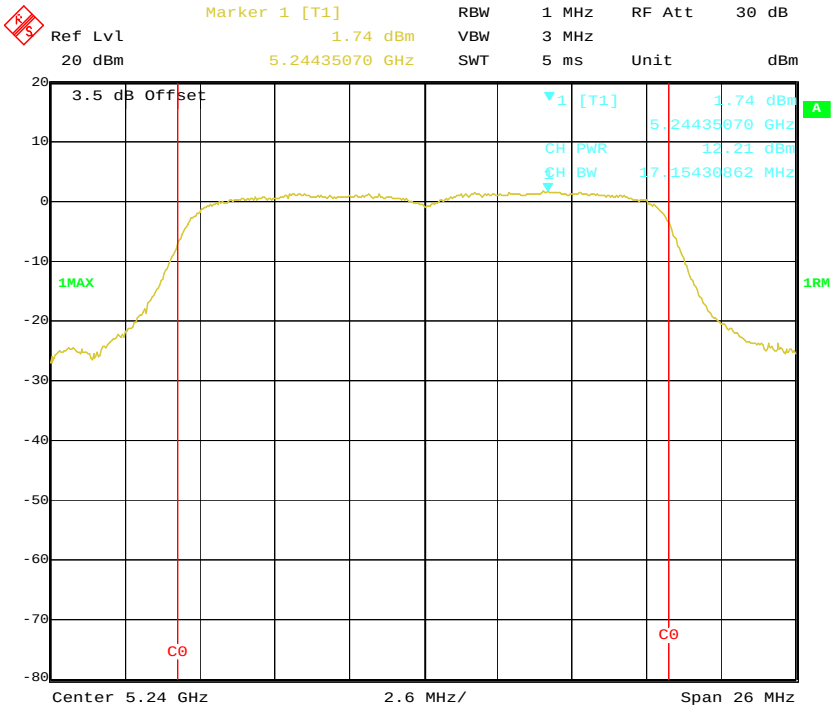
802.11a mode, RF Conducted Output Power, 5200 MHz



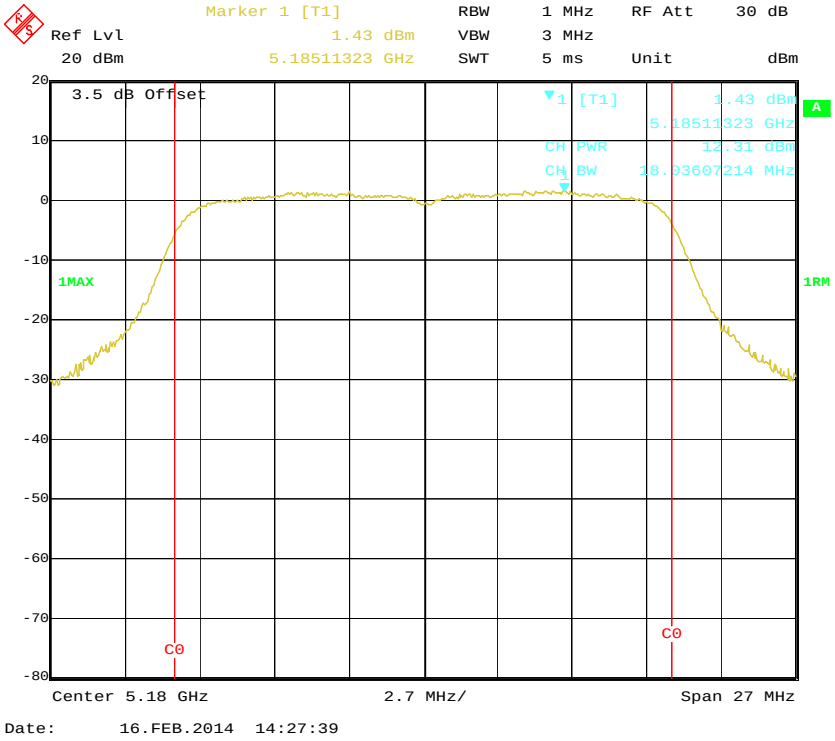
802.11a mode, RF Conducted Output Power, 5220 MHz



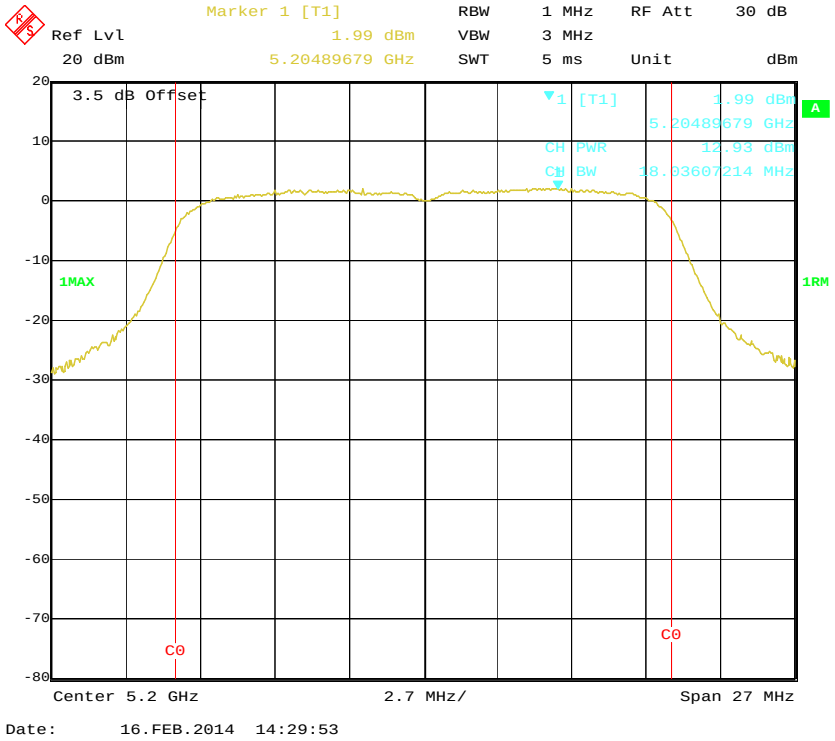
802.11a mode, RF Conducted Output Power, 5240 MHz



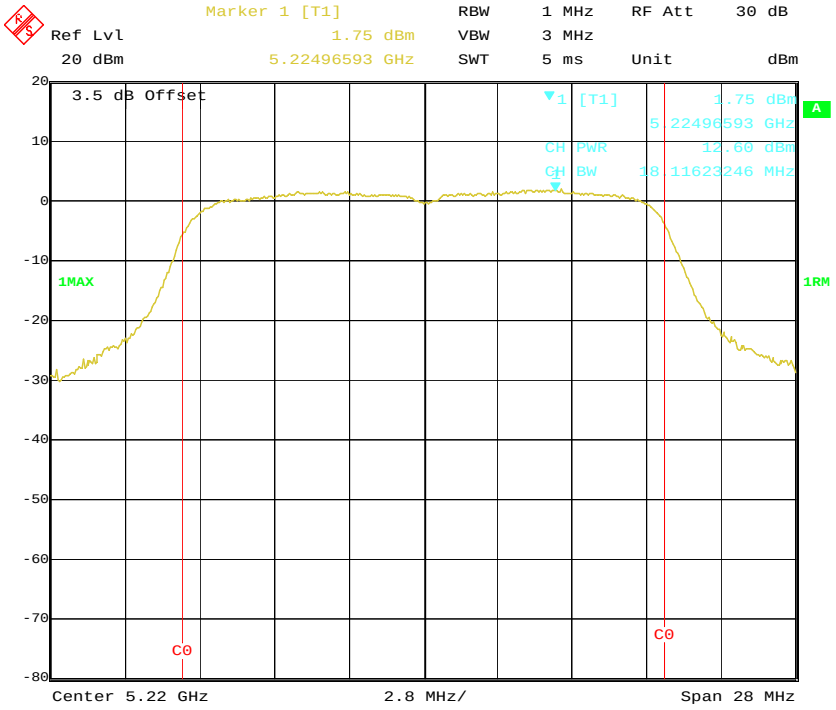
802.11n mode, RF Conducted Output Power, 5180 MHz



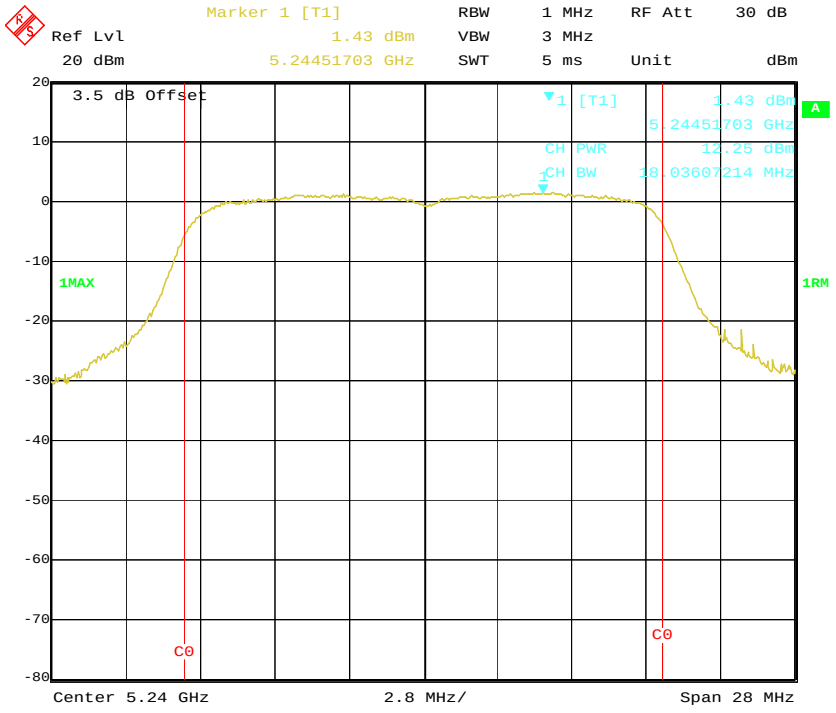
802.11n mode, RF Conducted Output Power, 5200 MHz



802.11n mode, RF Conducted Output Power, 5220 MHz



802.11n mode, RF Conducted Output Power, 5240 MHz



FCC §15.407(a) (1) (5) - POWER SPECTRAL DENSITY

Applicable Standard

For the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW or 4 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 4 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the 5.25–5.35 GHz and 5.47–5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725–5.825 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 1 W or 17 dBm + 10 log B, where B is the 26-dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 17 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT was set without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Use sample detector and power averaging (not video averaging) mode. Set RBW= 1 MHz*, VBW > 1 MHz. The PPSD is the highest level found across the emission in any 1-MHz band after 100 sweeps of averaging. This method is permitted only if the transmission pulse or sequence of pulses remains at maximum transmits power throughout each of the 100 sweeps of averaging and that the interval between pulses is not included in any of the sweeps.
4. Repeat above procedures until all frequencies measured were complete.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	8386001028	2013-11-12	2014-11-12

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	21 ℃
Relative Humidity:	50 %
ATM Pressure:	101.0 kPa

The testing was performed by Gardon Zhang on 2014-02-16.

EUT operation mode: Transmitting

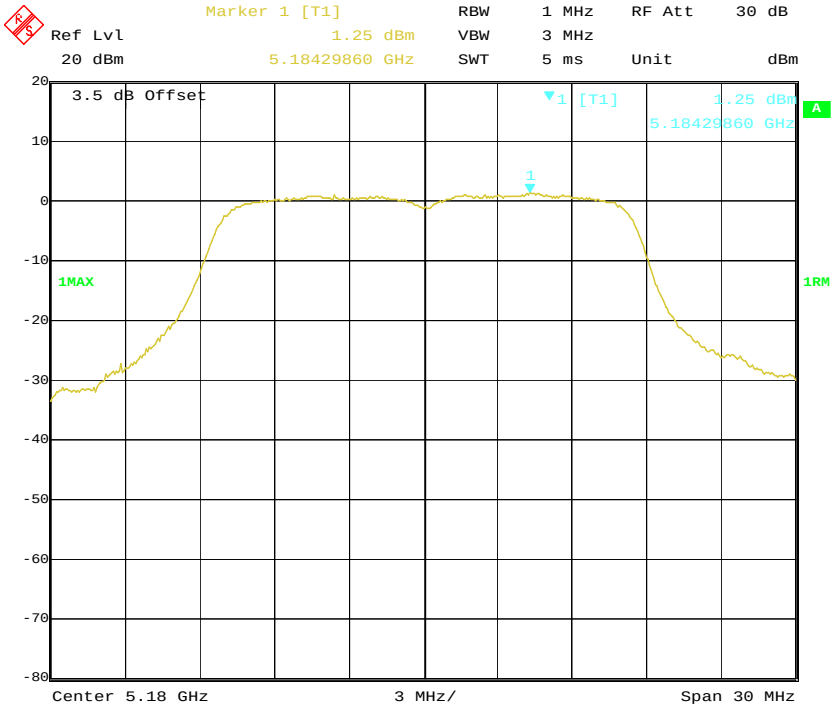
Test Result: Pass

Please refer to the following tables and plots.

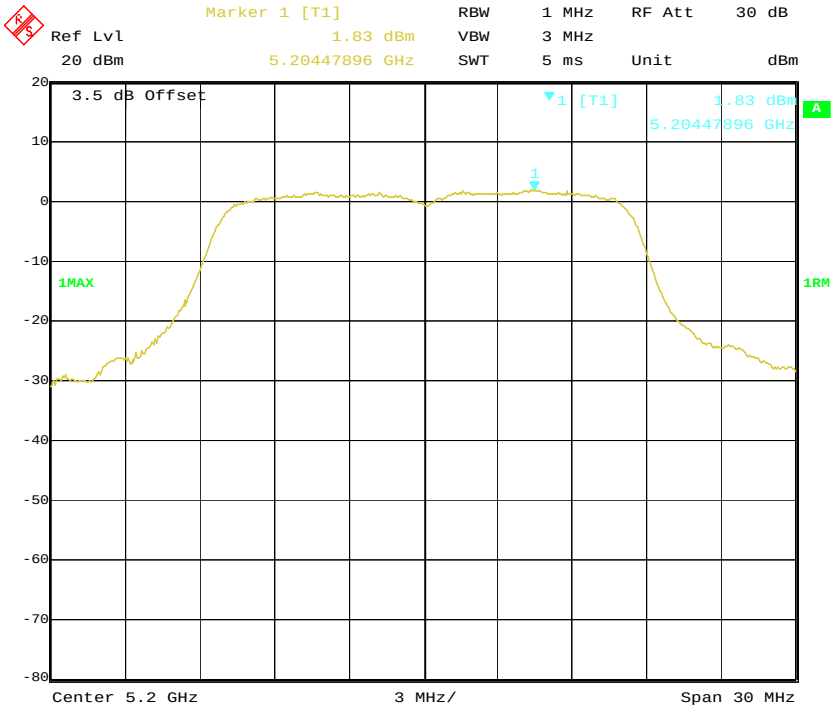
Frequency (MHz)	Power Spectral Density (dBm/MHz)	Limit (dBm/MHz)	Result
802.11a			
5180	1.25	4.00	Pass
5200	1.83	4.00	Pass
5220	1.74	4.00	Pass
5240	1.85	4.00	Pass
802.11n			
5180	0.95	4.00	Pass
5200	1.75	4.00	Pass
5220	1.77	4.00	Pass
5240	1.37	4.00	Pass

*Note: The antenna Gain is 1 dBi.

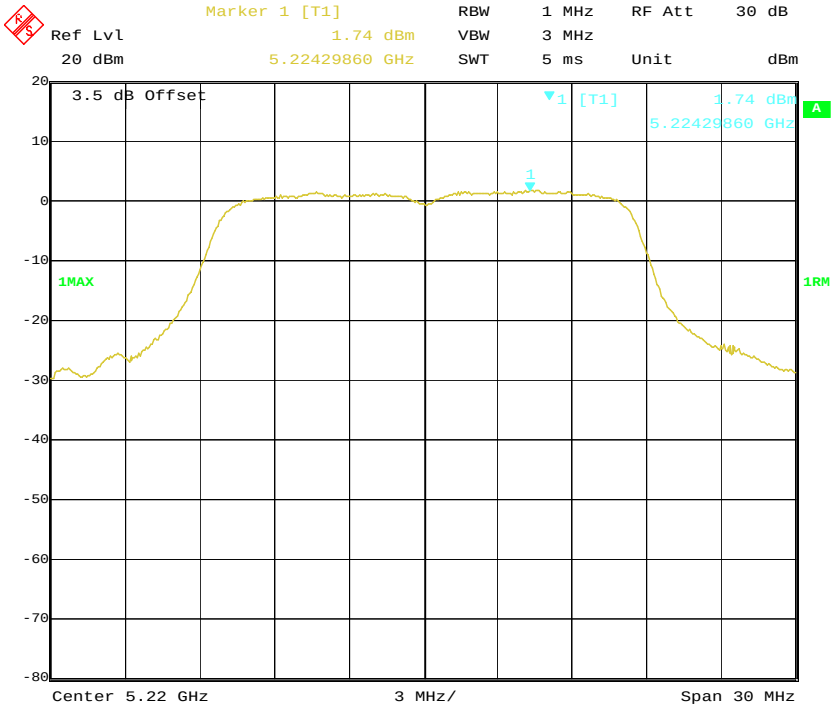
802.11a mode, Power Spectral Density, 5180 MHz (Peak of Spectrum)



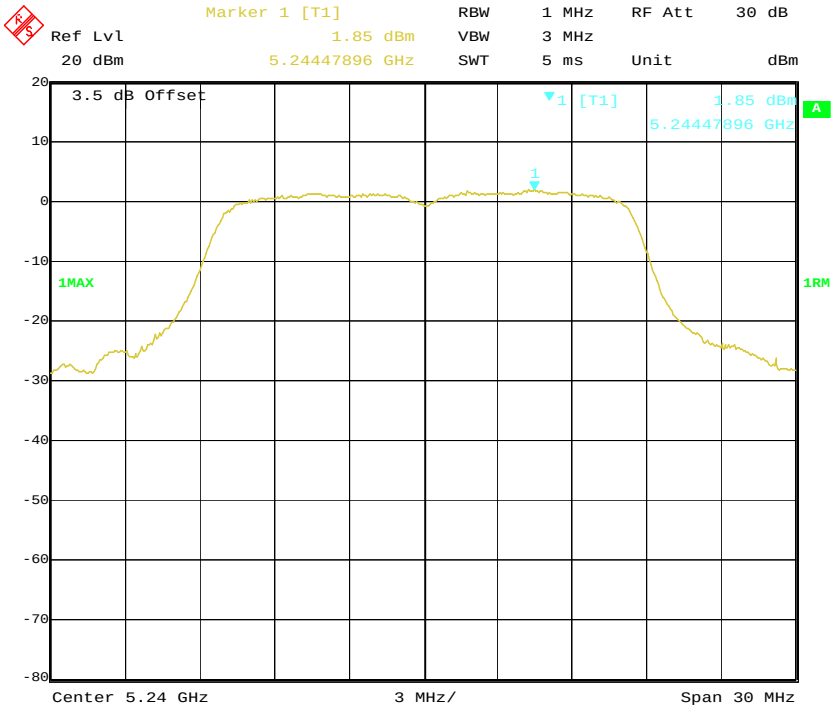
802.11a mode, Power Spectral Density, 5200 MHz (Peak of Spectrum)



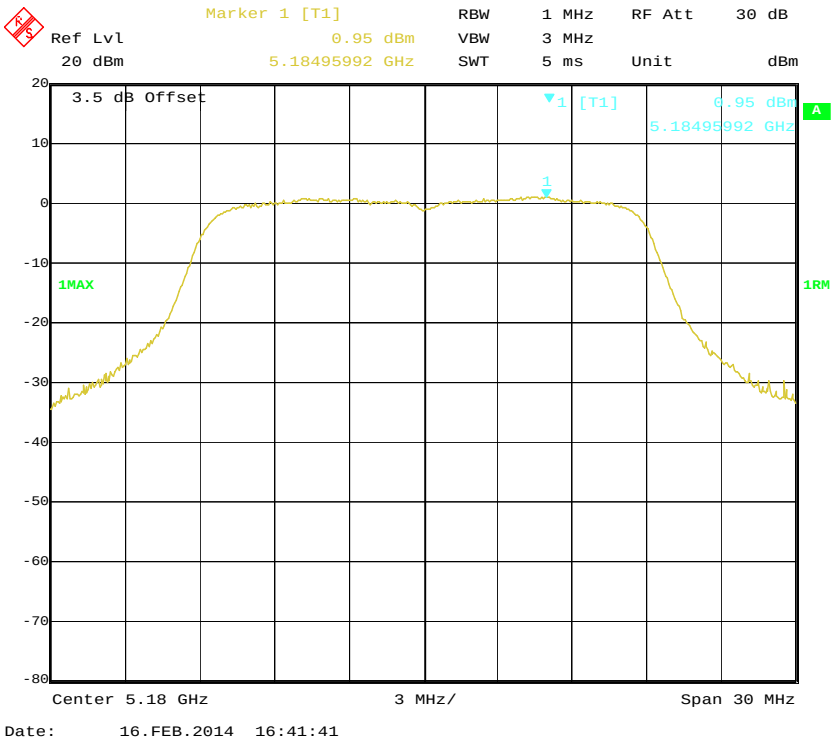
802.11a mode, Power Spectral Density, 5220 MHz (Peak of Spectrum)



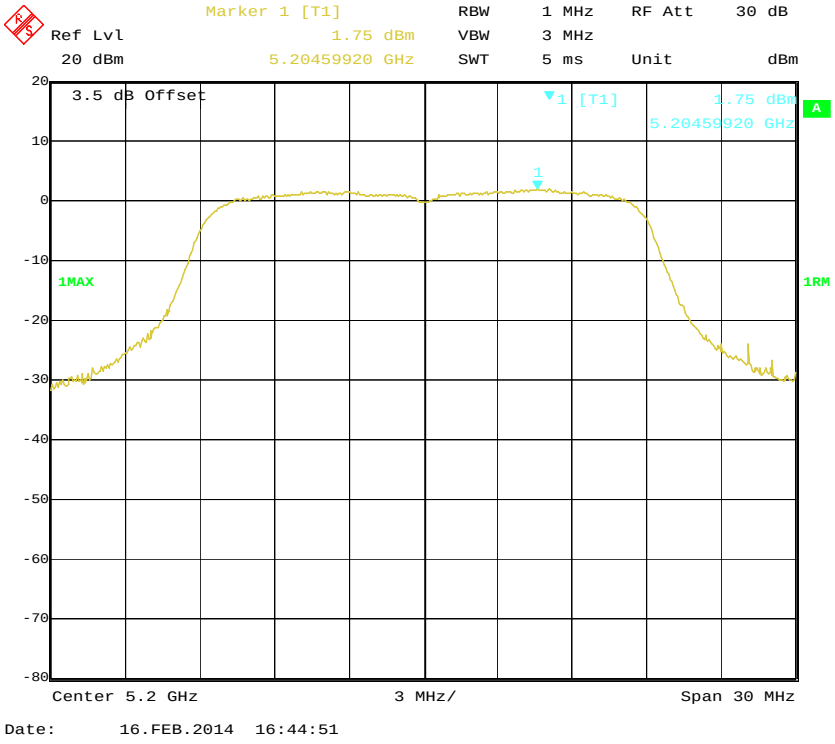
802.11a mode, Power Spectral Density, 5240 MHz (Peak of Spectrum)



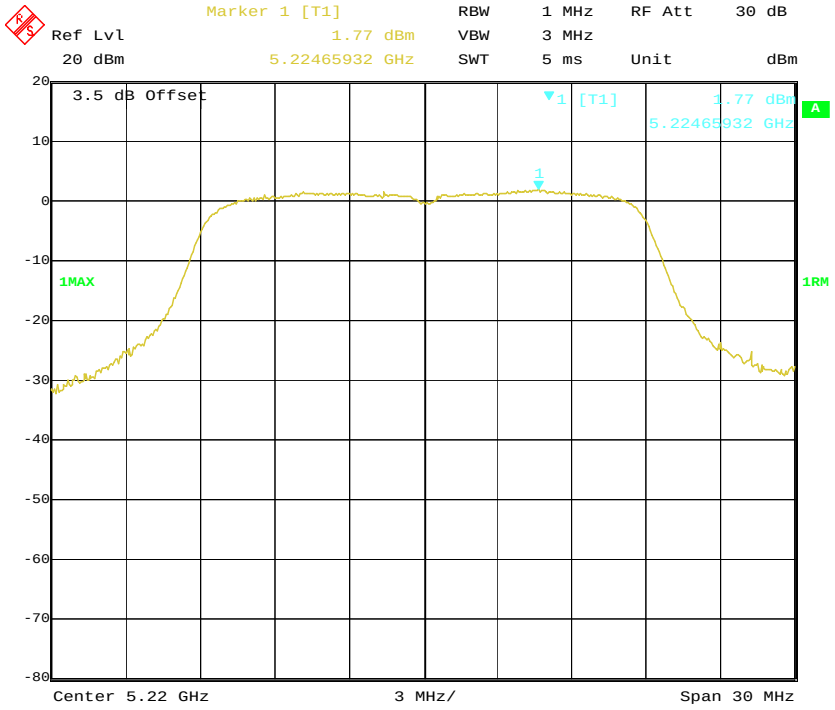
802.11n mode, Power Spectral Density, 5180 MHz (Peak of Spectrum)



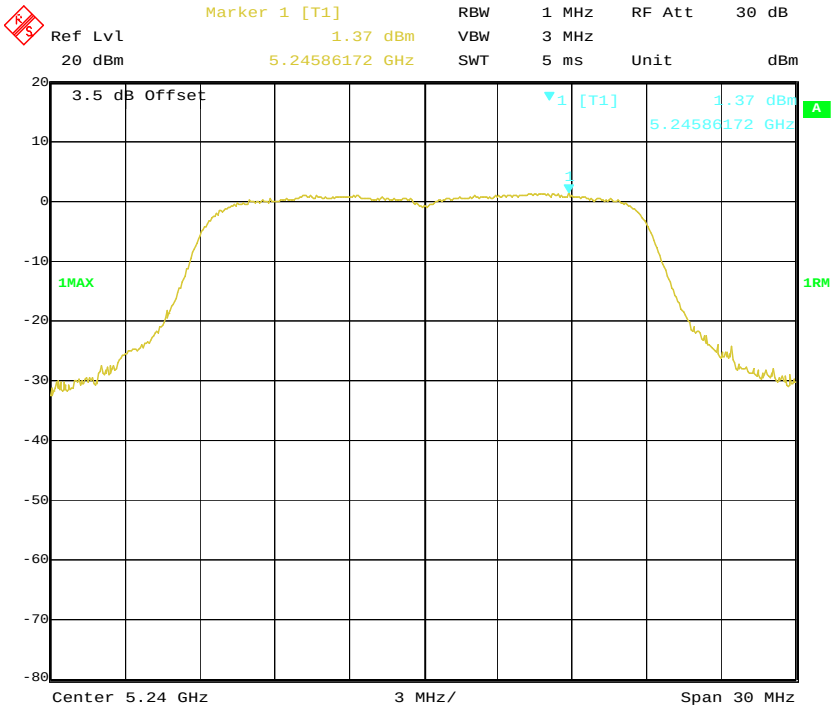
802.11n mode, Power Spectral Density, 5200 MHz (Peak of Spectrum)



802.11n mode, Power Spectral Density, 5220 MHz (Peak of Spectrum)



802.11n mode, Power Spectral Density, 5240 MHz (Peak of Spectrum)



FCC §15.407(a) (6) – PEAK EXCURSION RATIO

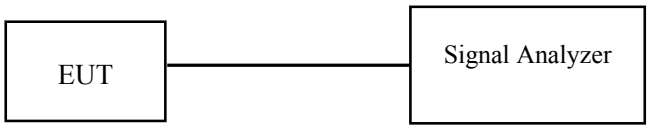
Applicable Standard

According to §15.407(a) (6), the ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the maximum conducted output power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

Test Procedure

According to KDB789033 D01 General UNII Test procedures v01r03-subclause F, G

1) Set the spectrum analyzer or EMI receiver span to view the entire emission bandwidth.
2) Find the maximum of the peak-max-hold spectrum.
 a) Set RBW = 1 MHz.
 b) VBW ≥ 3 MHz.
 c) Detector = peak.
 d) Trace mode = max-hold.
 e) Allow the sweeps to continue until the trace stabilizes.
 f) Use the peak search function to find the peak of the spectrum.
 3) Use the procedure found under F) to measure the PPSD.
 4) Compute the ratio of the maximum of the peak-max-hold spectrum to the PPSD.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	8386001028	2013-11-12	2014-11-12

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	21 ℃
Relative Humidity:	50 %
ATM Pressure:	101.0 kPa

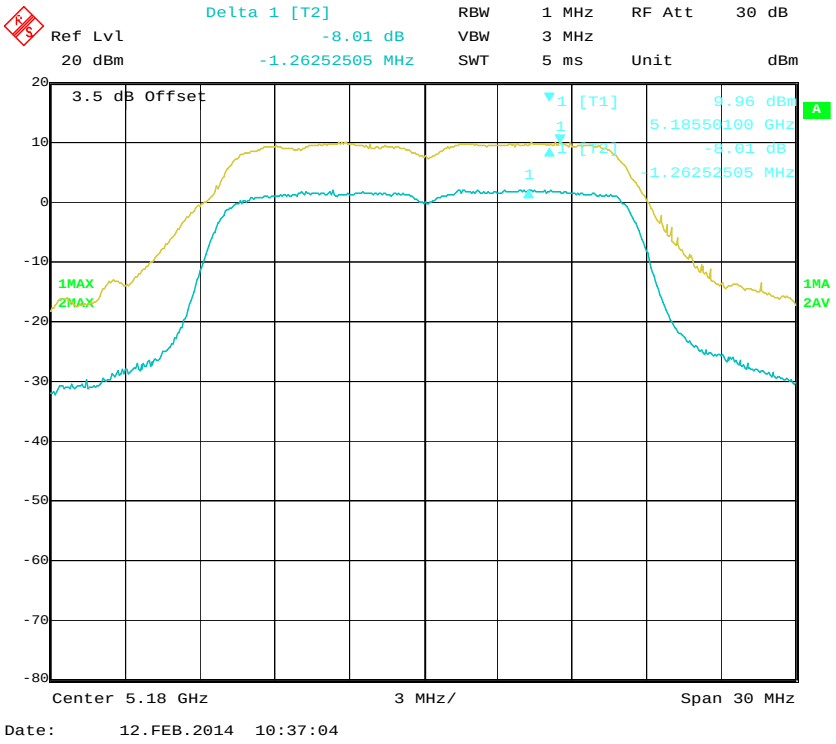
The testing was performed by Gardon Zhang on 2014-02-12.

EUT operation mode: Transmitting

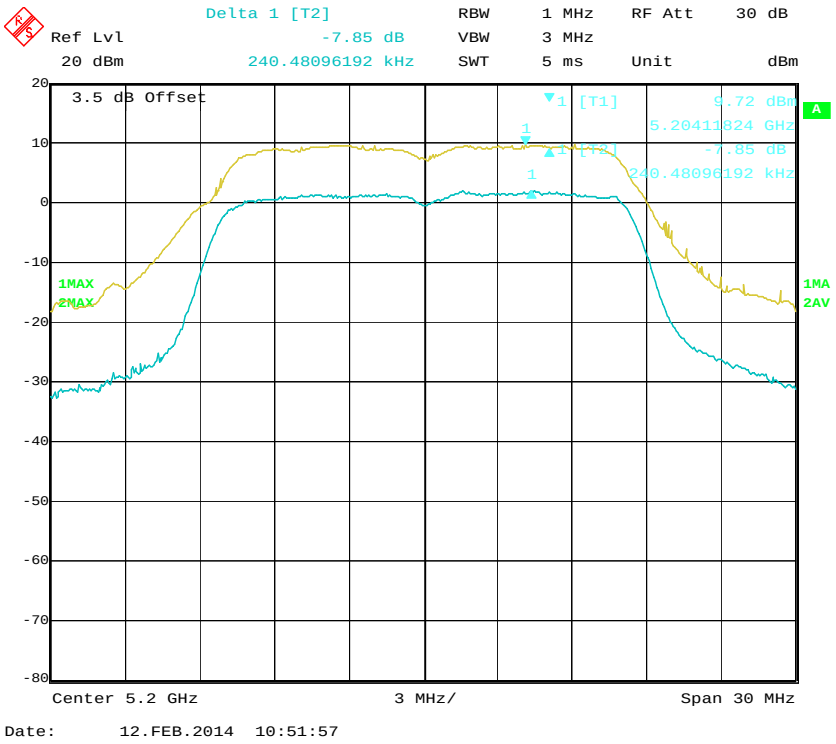
Please refer to the following tables and plots

Channel Frequency (MHz)	Peak Excursion Ratio (dB)	Limit (dB)	Result
802.11a			
5180	8.01	13	Pass
5200	7.85	13	Pass
5220	7.96	13	Pass
5240	7.91	13	Pass
802.11n			
5180	7.54	13	Pass
5200	7.76	13	Pass
5220	7.72	13	Pass
5240	7.75	13	Pass

802.11a mode, Peak Excursion Ratio, 5180 MHz

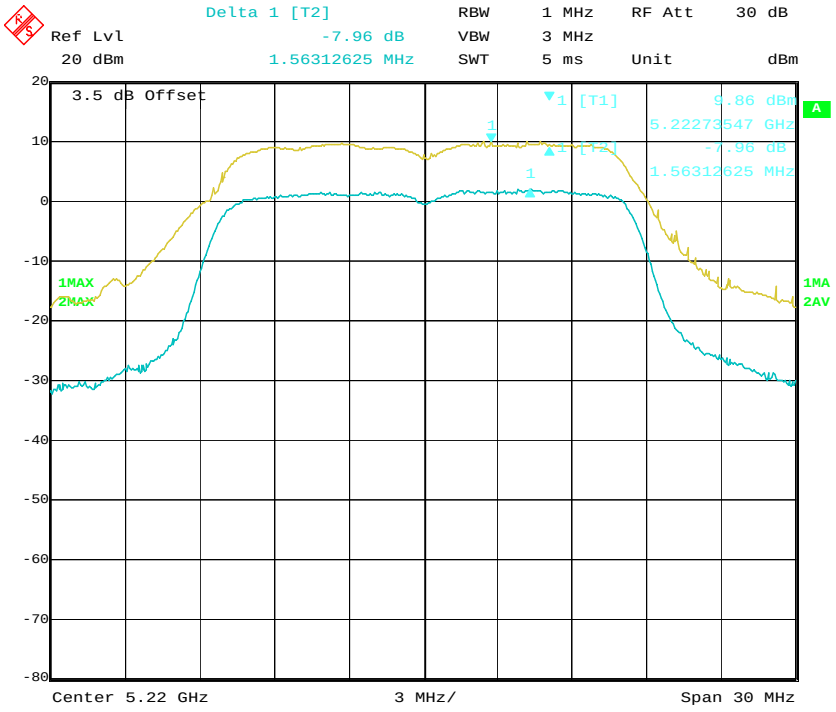


802.11a mode, Peak Excursion Ratio, 5200 MHz



Date: 12.FEB.2014 10:51:57

802.11a mode, Peak Excursion Ratio, 5220 MHz



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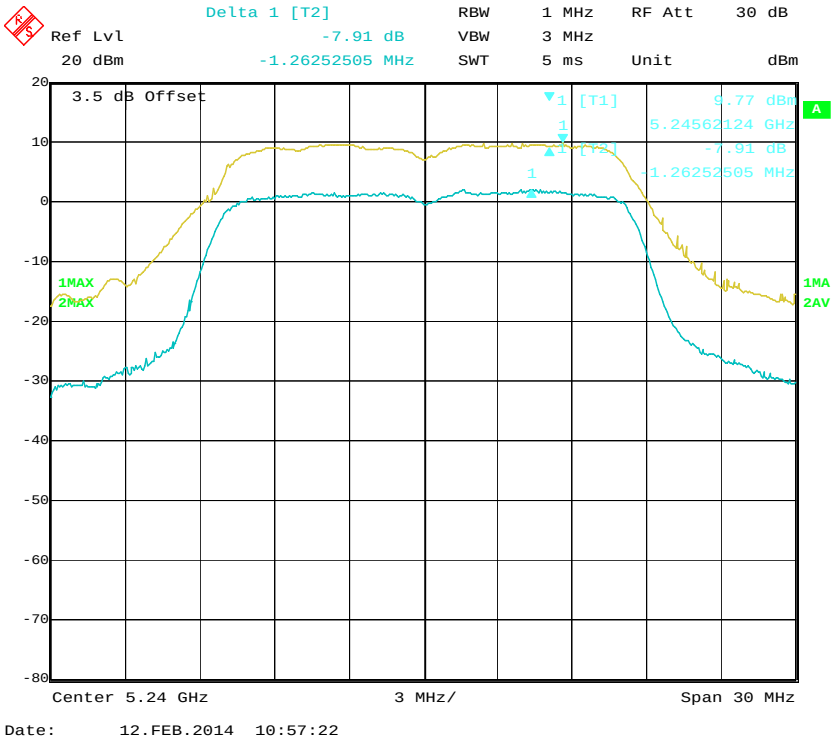
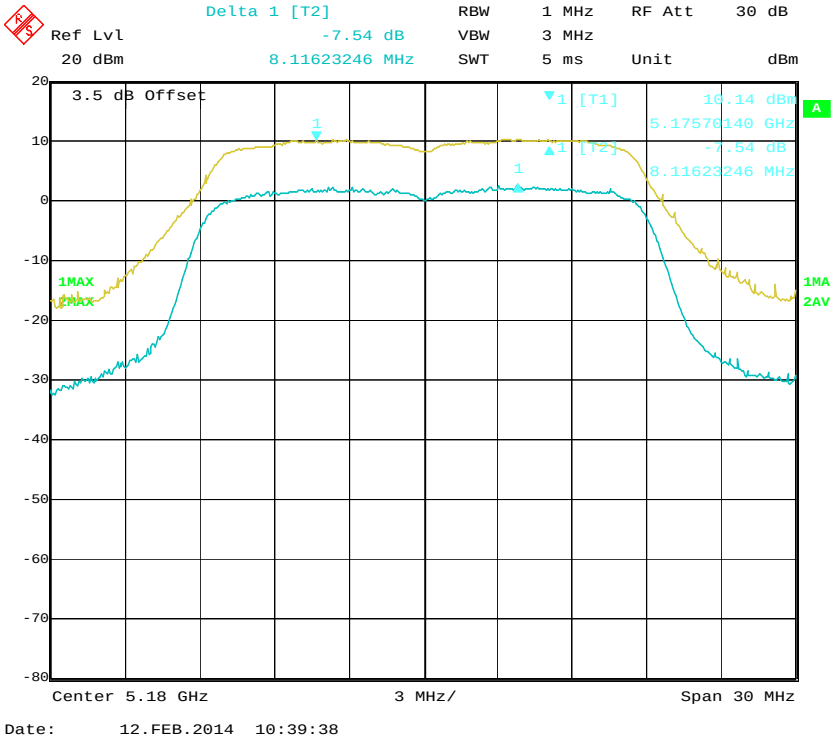
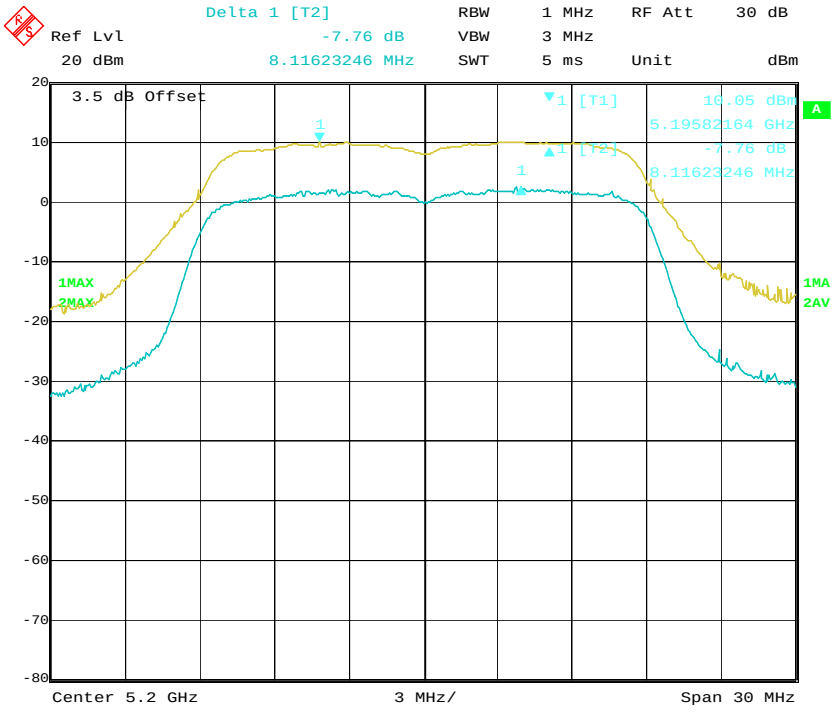
802.11a mode, Peak Excursion Ratio, 5240 MHz



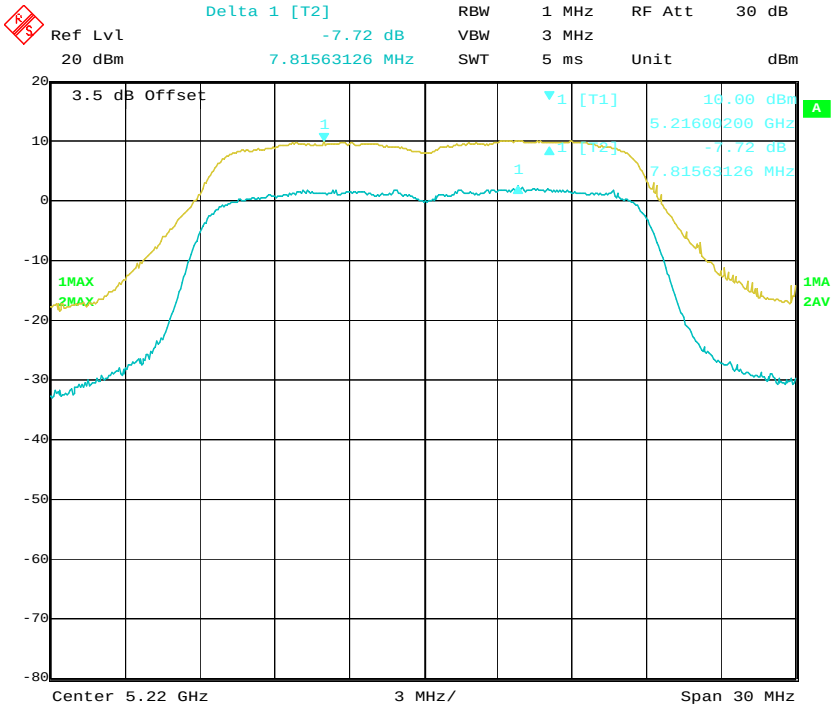
802.11n mode, Peak Excursion Ratio, 5180 MHz



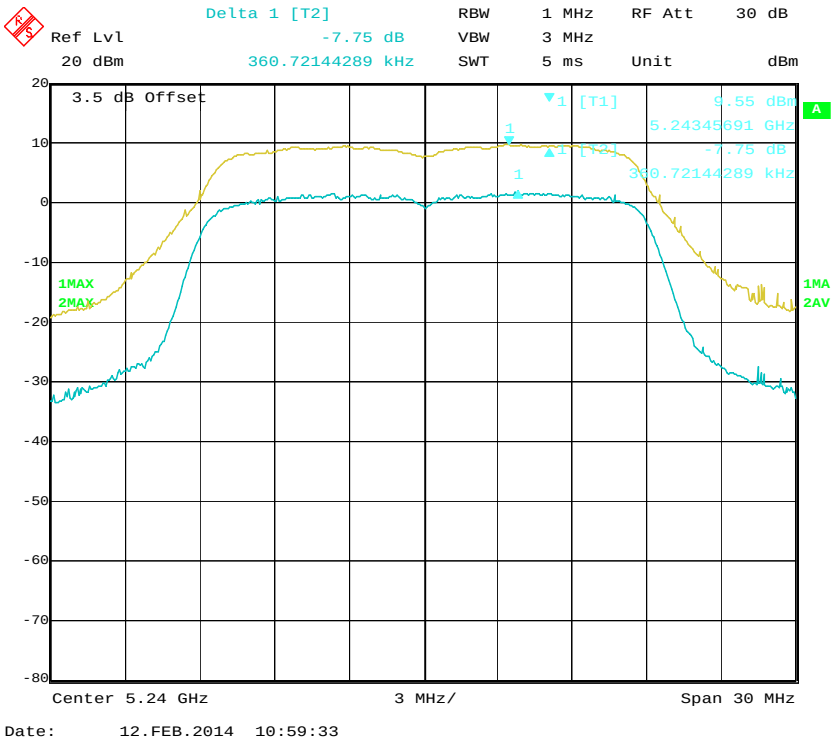
802.11n mode, Peak Excursion Ratio, 5200 MHz



802.11n mode, Peak Excursion Ratio, 5220 MHz



802.11n mode, Peak Excursion Ratio, 5240 MHz



PRODUCT SIMILARITY DECLARATION LETTER

RTX Hong Kong Ltd.
8/F Corporation Square,8 Lam Lok Street, Kowloon Bay, Hong Kong
Tel: +852 24873718 Fax: +852 24806121

2014-3-24

Product Similarity Declaration Letter

To Whom It May Concern,

We, RTX Hong Kong Ltd. hereby declare that our product DECT Handset; the model G966 DECT Handset and RTX8152 are electrically identical, they have the same PCB layout and schematic, the only difference is the model number for the purpose of market.

Model G966 DECT Handset was tested by BACL.

Please contact me if you have any question.

Signature:

Ted Chong
Engineering Manager

******* END OF REPORT *******